

COURSE OUTCOMES – LANGUAGES & ALL PROGRAM OUTCOMES

Department of Tamil	
Course Outcomes	
Courses	Outcomes
Part- I Tamil Paper I & II	More information about one's culture and tradition; encourage creative writing and develop self-confidence.
Part- I Tamil Paper III & IV	Human excellence; increased level of comprehension and communal harmony.
Basic Tamil	Helping the students who did not learn Tamil till Higher Secondary know the basics of the language.
Advanced Tamil	Teaching various genres in Tamil Literature to Tamil students who did not opt Tamil as Part I language in the first year.

Department of Hindi	
Course Outcomes	
Courses	Outcomes
Part- I- Hindi Paper I Paper II Paper- III Paper IV	Enables other state students to continue their learning phase without any disruptions. Through this language they can learn spirituality, social discrimination and grammar techniques
	Enables them to enhance their language skills
	Enables them to develop creative writing

Department of French	
Course Outcomes	
Courses	Outcomes
Part- I- French Paper I	Focus on all four modalities of the language: speaking, listening, reading and writing as well as knowledge of Francophone cultures and the skills of collaboration and critical thinking.
Paper II Paper- III Paper IV	Students can compare and contrast cultural practices as they relate to French and American culture and are able to generalize about the importance of understanding cultural differences.
	Students can demonstrate critical thinking and collaborative problem-solving through advanced task-based language activities.

Department of English	
Course Outcomes	
Courses	Outcomes
Part- II- English Paper I	Articulate clear questions and ideas in class discussion; listen thoughtfully and respectfully to other's ideas. Prepare, organize and deliver engaging oral presentations
Paper II Paper- III Paper IV	Skills of analytical and interpretive arguments; become careful and critical readers, Practice writing in a variety of genres as a process of intellectual inquiry, creative expression and ultimately to become more effective thinkers and communicators who are well equipped for a variety of careers in our information intensive society.

Program Outcomes (Common for all programmes)

- PO1 : Apply the knowledge of mathematics, science, arts and management principles in a number of applications.
- PO2 : Devise solutions for intricate problems and plan processes that meet the specified needs with appropriate consideration for the society, health , safety, cultural and environmental considerations.
- PO3 : Use innovation-based knowledge and creative methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO4 : Create, select, and apply appropriate techniques, resources, and modern IT tools including prediction and modeling to complex activities with an understanding of the limitations.
- PO5 : Comprehend the influence of the proficient clarifications in societal and environmental context for sustainable development.
- PO6 : Pertain ethical principles and entrust to professional ethics and responsibilities.
- PO7 : Function effectively as an individual, and in assorted teams.
- PO8 : Communicate effectively on various activities and make effective presentations.
- PO9 : Exhibit comprehension and understanding of the programmes and apply them in a multidisciplinary environment.
- PO10 : Be familiar with the need for and have the training and skill to engage in self-regulating and life-long learning in the broadest perspective of hi-tech change.

NAME OF THE PROGRAM: B.A.English Literature

Program Specific Outcome: B.A. English

- PSO1 : On pursuing an emphasis in Literature, English gain a deeper understanding of the resources of the written word.
- PSO2 : It helps students to explore the entire range of human experience in the resources of language in Fiction, Poetry, Non-Fiction, Prose and Drama

- PSO3 : It helps students to build skills of analytical and interpretive arguments; become careful and critical readers, Practice writing in a variety of genres as a process of intellectual inquiry, creative expression and ultimately to become more effective thinkers and communicators who are well equipped for a variety of careers in our information intensive society.
- PSO4 : It offers students the opportunity to study influential writings from the British, American and global Anglophone traditions.
- PSO5 : It focuses on a historical period, an issue or theme, a critical approach or a literary genre.
- PSO6 : It provides imagination and critical insights into all areas of human experience- war and peace, nature and culture, love and sexuality, selfhood and social identity, justice and atrocity, the burdens of history and the dreams of the future.
- PSO7 : Studying Literature encourages the graduates to view the reading of challenging and imaginative texts as an essential and rewarding part of a life –long commitment to learning and growth.
- PSO8 : Read complex texts actively recognize key passages, raise questions, appreciate complexity and ambiguity, and comprehend the literal and figurative uses of language.
- PSO9 : Increases confidence in speaking publicly, articulate clear questions and ideas in class discussion; listen thoughtfully and respectfully to other ideas and prepare, organize and deliver engaging oral presentations.
- PSO10 : Enjoy the experience of reading challenging Literature, appreciate literature’s ability to elicit feeling, cultivate the imagination and call us to account as humans.

SEMESTER I

Course Outcome: English I

CO1: Improves their proficiency in English language.

CO2: Develops the habit of effective reading.

CO3: Develops effective writing skills.

CO4: Develops functional communicative aspect of language through a series of real life tasks.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core I - Prose I

CO1: Students know about the important authors of English Prose.

CO2: Enriches their active and passive vocabulary.

CO3: Enhances their understanding and increases pleasure in reading

CO4: Comprehends the literal and figurative use of language.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core I - Fiction I

CO1: Draws the students into their imaginative worlds and engage with the power of their invention.

CO2: Deepens the appreciation of life.

CO3: Increases pleasure of reading

CO4: Fiction is a verbal machine which transports the readers in space and time

CO5: Explores the entire range of human experience.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Allied Paper - I : Social History of England

CO1: Recognize and discuss selected literary texts from the renaissance to the present.

CO2: Understands the diversity of the human experience as influenced by geographical location, race, ethnicity, cultural, traditions, gender and class.

CO3: Analyses historical processes that shape individuals and communities.

CO4: Assess use and synthesize different kinds of historical sources to make a coherent argument about the past.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Professional English I – Basic Language Skills

CO1: Understand correct usage of vocabulary and grammar in speaking and writing

CO2: Enrich the language skills through academic writing

CO3: Develop the communicative skills by responding to given situations

CO4: Improve the leadership quality and team building

CO5: Comprehend the information in various circumstances

Credits: 6 Theory Period of 1 Hour per week over a Semester

SEMESTER II

English II

CO1: Improves their proficiency in English language.

CO2: Develops the habit of effective reading.

CO3: Develops effective writing skills.

CO4: Develops functional communicative aspect of language through a series of real life tasks.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core III - Poetry I

CO1: Engage in close analysis of narrative and poetic language which helps in applying technical analytical terms.

CO2: It helps in developing phonemic awareness, self expressions and memorization skills.

CO3: Analyze the various elements of poetry such as Diction, Tone, Form, Genres, Imagery, Figures of Speech, Symbolism, Theme, etc.

CO4: Recognize the Rhythms, Metrics and other musical aspects of poetry.

CO5: Identify the variety of forms and genres of poetry such as Sonnets, Ballads, Dramatic Monologues, Free Verse, etc.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core IV - Drama I

CO1: Knows about the distinct literary characteristics of drama, emphasizing the changing approaches to theater as well as the social, cultural, and philosophical implications in the plays.

CO2: Analyses plays for their structure and meaning, using correct terminology.

CO3: Helps to learn about the literary forms of literature.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Allied Paper - II : History of English Literature

CO1: Study influential writings from the British, American and Global traditions.

CO2: Focuses on historical period, an issue or theme, a critical approach, or a literary genre.

CO3: Provides critical insight into all areas of human experience war and peace, nature and culture, social identity, the burdens of history and dreams and future.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Professional English II

CO1: Understand the importance of language competence in workplace situations

CO2: Develop LSRW skills for academic and career purposes

CO3: Enhance employability skills through various speaking and writing tasks

CO4: Improve the communication suitable for workplace

CO4: Enhance digital competence with innovation and imagination

Credits: 6 Theory Period of 1 Hour per week over a semester

SEMESTER III

English III

CO1: Improves their proficiency in English language.

CO2: Develops the habit of effective reading.

CO3: Develops effective writing skills.

CO4: Develops functional communicative aspect of language through a series of real life tasks.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core V - Prose II

CO1: Students know about the important authors of English Prose.

CO2: Enriches their active and passive vocabulary.

CO3: Enhances their understanding and increases pleasure in reading

CO4: Comprehends the literal and figurative use of language.

Credits: 4 Theory Period of 1 Hour per week over a Semester

Core VI - Fiction II

CO1: Draws the students into their imaginative worlds and engage with the power of their invention.

CO2: Deepens the appreciation of life.

CO3: Increases pleasure of reading

CO4: Fiction is a verbal machine which transports the readers in space and time

CO5: Explores the entire range of human experience.

Credits: 4 Theory Period of 1 Hour per week over a Semester

Allied Paper - III : Literary Forms

CO1: Approaches literary texts in terms of genre, gender and the canon.

CO2: Knows the strategies of each genre, that is, personal essays, articles, fiction, poetry, and drama.

CO3: Explores works of literature classified by form.

CO4: Explores issues and questions that arise in connection with literary form.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Job Oriented Course Paper I – Language skill – 1

CO1: Master framing sentence on different pattern

CO2: Apply grammar in Speaking and writing

CO3: Prepare grammatically correct passages

CO4: Present short features

Credits: 3 Theory Period of 1 Hour per week over a Semester

SEMESTER IV

English IV

CO1: Improves their proficiency in English language.

CO2: Develops the habit of effective reading.

CO3: Develops effective writing skills.

CO4: Develops functional communicative aspect of language through a series of real life tasks.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core VII - Poetry II

CO1: Engage in close analysis of narrative and poetic language which helps in applying technical analytical terms.

CO2: It helps in developing phonemic awareness, self expressions and memorization skills.

CO3: Analyze the various elements of poetry such as Diction, Tone, Form, Genres, Imagery, Figures of Speech, Symbolism, Theme, etc.

CO4: Recognize the Rhythms, Metrics and other musical aspects of poetry.

CO5: Identify the variety of forms and genres of poetry such as Sonnets, Ballads, Dramatic Monologues, Free Verse, etc.

Credits: 4 Theory Period of 1 Hour per week over a Semester

Core VIII - Drama II

CO1: Knows about the distinct literary characteristics of drama, emphasizing the changing approaches to theater as well as the social, cultural, and philosophical implications in the plays.

CO2: Analyses plays for their structure and meaning, using correct terminology.

CO3: Helps to learn about the literary forms of literature.

Credits: 4 Theory Period of 1 Hour per week over a Semester

Allied Paper - IV: Literary criticism

CO1: Ability to describe a number of contemporary and historical schools of literary criticism, such as formalism, deconstruction, cultural, new historical, and gender/feminist.

CO2: Able to discuss cogently, themes, and in writing: important concepts, themes, and traditions growing out of a specialized area of study.

CO3: Demonstrates customary terms such as style and genre, also in their cultural and historical contexts as texts produced by non-canonical or underrepresented writers.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Job Oriented Course – Paper II – Language Skill II

CO1: Transform sentences into different kinds and learn synthesis & transformation of sentences

CO2: Apply grammar in LSRW

CO3: Analyze the usage of words, comprehend the writings and composition

CO4: Adapt professional Writing

Credits: 3 Theory Period of 1 Hour per week over a Semester

SEMESTER V

Core IX - Shakespeare I

CO1: Enables and enhances to know more about Shakespeare.

CO2: Historical works, plays, sonnets, Elizabethan theatre, Elizabethan audience, his contemporaries.

CO3: Gains an insight into the age of Shakespeare.

CO4: Analyses Shakespeare's works critically.

CO5: Demonstrates greater reading fluency of Elizabethan English.

CO6: Identifies distinct literary, cultural, and historical characteristics of Shakespearean plays.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core X - Indian Writing in English

CO1: Knows about major movement and figures of Indian literature in English through the study of selected literary texts.

CO2: Exposes students to the artistic and innovative use of language employed by the Indian writers.

CO3: Instills values and develops human concern.

CO4: Enhances literary and linguistic competence of students.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XI - American Literature

CO1: Examines the culture and literature of the America from the colonial period through the early national period of the United States.

CO2: Deals with the prose and poetry written in the united states from colonial times to the present

CO3: Knows about each writer, poet and author who not only sets a higher standard for the text, but adds to the mosaic it has originated and exemplifies a distinctly unsympathetic and unforgiving theme.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XII - Commonwealth Literature

CO1: Understands and appreciates aesthetic, moral and cultural trends of literatures in the English Language.

CO2: Gains understanding of the unique aspects of the diverged literatures of the world

CO3: To know about sharing culture

CO4: Knows about intergovernmental organization of 54 nations which were formerly part of the British Empire.

CO5: Provides framework of common values, facilitating cooperation between its member states in the field of democracy, human rights, rule of law, free trade and peace.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Elective: I: English for Competitive Examinations

CO1: Enables the learners become proficient users of English involving all the skills of English.

CO2: Confidently and successfully face the competitive examination which plays a crucial role in deciding their career.

CO3: Facilitates effective communication in English.

CO4: Honing the skills involved in the use of appropriate vocabulary.

CO5: Sharpens the ability for logical reasoning.

CO6: Builds confidence in handling English language.

Credits: 4 Theory Period of 1 Hour per week over a Semester

Value Added Course – Paper I – Study of English Phonetics - I

CO1: Learn phonetics symbols with sounds

CO2: Use right accent and rhythm in speaking

CO3: Analyze the syllable and accent

CO4: Classify the speak sound

Credits: 3 Theory Period of 1 Hour per week over a Semester

SEMESTER VI

Core XIII - Shakespeare - II

CO1: Enables and enhances to know more about Shakespeare.

CO2: Historical works, plays, sonnets, Elizabethan theatre, Elizabethan audience, his contemporaries.

CO3: Gains an insight into the age of Shakespeare.

CO4: Analyses Shakespeare's works critically.

CO5: Demonstrates greater reading fluency of Elizabethan English.

CO6: Identifies distinct literary, cultural, and historical characteristics of Shakespearean plays.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XIV - Intensive Study of an Author- Tagore

CO1: Knows about Tagore's writings filled with images of human activity and habitation.

CO2: Knows about Tagore's fascination and absorption in heritage.

CO3: Knows about self-infinity or endlessness which is a natural consequence.

CO4: Understanding of women- their discontents and dilemmas in the patriarchal society.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XV - Indian Literature in English Translation

CO1: Highlights the agenda and purpose of translation.

CO2: Origin and development of translations from Indian languages into English.

CO3: Knows about the emphasis is upon a thematic rather than a chronological survey.

CO4: Discusses issues of resistant and representation with reference to Indian texts and their English translations.

CO5: Argues that the contextualization, theorization and canonization of Indian literature in English translation needs attention in today's fast changing literary scene.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Elective: II Communicative English

CO1: Increases confidence in their ability to read comprehends organize and retain written information.

CO2: Increases Vocabulary through the study of word parts, use of context clues and Practice with a dictionary.

CO3: Uses standard Grammar, punctuation and spelling, be clear and concise in formal technical writing.

CO4: Learns to analyze unfamiliar words by understanding the structure of the English language.

CO5: Improves comprehension and retention.

CO6: Improves their ability to read and spell words through an analysis of structure of the English language.

CO7: Develops ideas with coherence and cohesion.

CO8: Builds confidence in handling English language.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Elective-III: Introduction to Linguistics

CO1: Correctly uses current vocabulary in a variety of Linguistics subfields such as semantics, language acquisition and Neurolinguistics.

CO2: Analyses complex words in terms of derivation, inflection, and compounding, explain the grammaticality or ungrammaticality of words using correct technical vocabulary.

CO3: Knows cross linguistics varieties of word-building strategies.

CO4: Analyses language change over time and different dialects.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Value Added Course – Paper II – Study of English Phonetics - II

CO1: The concept of general Indian English

CO2: Apply intonation accent rhythm in Speaking

CO3: Master phonetics symbols and sounds

CO4: Transcript into Phonetic language

Credits: 3 Theory Period of 1 Hour per week over a Semester

NAME OF THE PROGRAM: B.Sc. Mathematics

Program Specific Outcomes (PSO)

- PSO1. Maintain a core of mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for extended learning.
- PSO2. Identify the applications of Mathematics in other disciplines and society.
- PSO3. Develop an in-depth knowledge in Mathematics appreciating the connections between theory and its applications.
- PSO4. Demonstrate their mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- PSO5. Develop mathematical aptitude and the ability to think abstractly.
- PSO6. Learn independently and improve one's performance.
- PSO7. Students are equipped to appear competitive examinations.

Course Outcomes(CO):

SEMESTER – I

Core I: CLASSICAL ALGEBRA

- CO1. Know the concept of Binomial, Exponential, Logarithmic series and their application to summation of series.
- CO2. Acquire a clear knowledge regarding methods to find an approximate roots of the equations.
- CO3. Apply the appropriate tests to find the convergence or divergence of an infinite series.
- CO4. Apply Descartes's rule of signs to find the number of positive and negative roots if any in a polynomial equation .
- CO5. Analyze the relation between roots and coefficients of the polynomial equations.

Credits: 4 Theory Period of 1 Hour per week over a Semester

Core II: CALCULUS

- CO1. Identify areas in Mathematics and other fields where Calculus is useful.
- CO2. Understand the concepts of Evolutes and Envelopes, methods to find curvature and evolutes.
- CO3. Apply the concept of change of variables in double and triple integrals.
- CO4. Apply double, triple integral to find the area and volume respectively.

CO5. Apply the Beta and gamma function to solve the multiple integrals.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Allied-I: Physics-I

CO1. Students gain knowledge regarding the importance of physics in day to day life.

CO2. One gains knowledge about the motion of rigid bodies.

CO3. Students gain knowledge in the concept of heat energy.

CO4. Student acquires knowledge about the propagation of sound waves.

CO5. Gains knowledge in solar energy applications.

Credits: 5 Theory Period of 1 Hour per week over a Semester
2 Practical Period of 1 Hour per week over a Semester

SEMESTER - II

Core III: ANALYTICAL GEOMETRY

CO1. Gain knowledge about the regular geometrical figures and their properties.

CO2. Describe the geometric concepts.

CO3. Find equation to tangent, normal at a point on a conic

CO4. Analyze condition of tangency and find the tangent plane to the central conicoid

CO5. Analyze conics to explain natural phenomenon

Credits: 4 Theory Period of 1 Hour per week over a Semester

Core IV: TRIGONOMETRY, VECTOR CALCULUS AND FOURIER SERIES

CO1. Know the expansion of trigonometric functions and hyperbolic functions.

CO2. Acquire the basic knowledge of vector differentiation and vector integration.

CO3. Determine and apply the important quantities associated with vector fields such as the divergence, curl and scalar potential.

CO4. Understand and find Fourier series of a given periodic function.

CO5. Examine line integral, surface integral, volume integral and inter-relations among them.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Allied-II: Physics-II

- CO1. Students gain knowledge regarding the importance of physics in day to day life.
- CO2. One gains knowledge about the motion of rigid bodies.
- CO3. Students gain knowledge in the concept of heat energy.
- CO4. Student acquires knowledge about the propagation of sound waves.
- CO5. Gains knowledge in solar energy applications.

Credits: 5 Theory Period of 1 Hour per week over a Semester

2 Practical Period of 1 Hour per week over a Semester

SEMESTER - III

Core V: DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS

- CO1. Acquire knowledge to solve Differential and Partial Differential Equations.
- CO2. Solve higher order linear differential equations.
- CO3. Expose differential equation as a powerful tool in solving problems in Physical and Social sciences.
- CO4. Demonstrate competency to solve linear PDE by Lagrange's method
- CO5. Analyze the concepts of Laplace transforms and inverse Laplace transforms to solve ODE with constant coefficients.

Credits: 3 Theory Period of 1 Hour per week over a Semester

Core VI: STATICS

- CO1. Remember the various laws.
- CO2. Understand the concepts of forces and moments.
- CO3. Understand the concepts of equilibrium.
- CO4. Apply the concepts of forces and moments.
- CO5. Analyze the basics of coplanar forces, equilibrium of forces acting on a rigid body and solve the problems.

Credits: 3 Theory Period of 1 Hour per week over a Semester

Allied III: Statistics for Mathematics –I

- CO1. Students gain knowledge about the concepts of probability.
- CO2. Gains knowledge about discrete and continuous random variables.
- CO3. Gains knowledge about various probability distributions which are used in statistical investigation of real life situations.
- CO4. Students gets a clear idea regarding correlation and regression.
- CO5. One learns that Statistics is used in Business, Commerce, Inventory control,

Credits: 7 Theory Period of 1 Hour per week over a Semester

Skill Based Subject

Operations Research –I

- CO1. Understand the basic concepts and application of operations research in various fields.
- CO2. Know principles of construction of mathematical models of conflicting situations.
- CO3. Analyze the relationship between a linear program and its dual.
- CO4. Apply techniques constructively to make effective decisions in business and solve problems in industry.
- CO5. Build and solve transportation problems.

Credits: 3 Theory Period of 1 Hour per week over a Semester

SEMESTER - IV

Core VII: DYNAMICS

- CO1. Remember the basic kinematics and dynamic concepts.
- CO2. Describe the differential equation of Central Orbits.
- CO3. Apply the concepts of projectiles to solve problems relating to the motion of a projectile.
- CO4. To understand & apply the concepts of composition of simple harmonic motion in two directions.
- CO5. Understand impulsive forces and analyze loss of K.E due to direct and oblique

impact.

Credits: 3 Theory Period of 1 Hour per week over a Semester

Core VIII: PROGRAMMING IN C

- CO1. Remember the importance of C language and data types.
- CO2. Understand the basic structure, operators and statements of C language.
- CO3. Understand decision control statements, loop control statements.
- CO4. Apply the concepts of data types, operators, expressions, control statements, arrays, character arrays and strings to write the C code for a given algorithm.
- CO5. Read, understand and trace the execution of programs written in C language.

Credits: 2 Theory Period of 1 Hour per week over a Semester

1 Practical Period of 1 Hour per week over a Semester

Allied IV : Statistics for Mathematics II

- CO1. Students are able to understand the concepts of Applied Statistics.
- CO2. Students will gain knowledge in the concepts of Theory of Estimation.
- CO3. They learn various types of estimation and various tests, used in sampling theory.
- CO4. Students will gain knowledge in sampling theory.
- CO5. Learn the concepts of Analysis of Variance, Design of experiments.

Credits: 7 Theory Period of 1 Hour per week over a Semester

SKILL BASED SUBJECT

OPERATIONS RESEARCH –II

- CO1. Identify the importance of stocks, the reasons for holding stock in an organization, determine the optimal order quantity for models.
- CO2. Explain the various costs related to inventory system.
- CO3. Apply game theory concepts to articulate real-world situations by identifying, analyzing and practicing strategic decisions.
- CO4. Apply and extend queueing models to analyze real world systems.
- CO5. Build and solve assignment model.

Credits: 3 Theory Period of 1 Hour per week over a Semester

SEMESTER - V

Core IX: REAL ANALYSIS – I

- CO1. Remember the basic topological properties of subsets of the real numbers.
- CO2. Understand the fundamental properties of the real numbers and analyze the real number system.
- CO3. Learn the concept of limits, sequence, continuity, convergent sequence in metric spaces appreciating the abstract ideas and their applicability.
- CO4. Have the proficiency in the formulation and construction of proofs of basic results in real analysis.
- CO5. Demonstrate skills in communicating Mathematics and learn basic techniques and examples in analysis to be well prepared for extended learning .

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core X: COMPLEX ANALYSIS – I

- CO1. Learn techniques of complex analysis effectively to establish mathematical results.
- CO2. Recognize the simple and multiple connected domains.
- CO3. Investigate a function for its analyticity and find its series development.
- CO4. Examine the relationship between conformal mapping and analytic functions
- CO5. Compute contour integrals directly and by the fundamental theorem.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XI: MODERN ALGEBRA – I

- CO1. Recall the properties and extend group structure to finite permutation groups.
- CO2. Explain the concepts of homomorphism, isomorphism and automorphism.
- CO3. Demonstrate abstract thinking capacity and ability to prove theorems.
- CO4. Compare features of different algebraic structures.
- CO5. Examine the properties of algebraic structures and their role in applied contexts.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XII: DISCRETE MATHEMATICS

- CO1. Assimilate various graph theoretic concepts and familiarize with their applications.
- CO2. Know and understand about partially ordered sets, Boolean algebra, lattices and their types.
- CO3. Apply Karnaugh map for simplifying the Boolean expression.
- CO4. Demonstrate the skill to construct simple mathematical proofs and to validate.
- CO5. To achieve greater accuracy, clarity of thought and language.

Credits: 5 Theory Period of 1 Hour per week over a Semester

ELECTIVE I: NUMERICAL METHODS – I

- CO1. Remember the concepts of errors and its effect on computation.
- CO2. Obtain numerical solutions of algebraic and transcendental equations.
- CO3. Apply the finite difference and interpolation concepts.
- CO4. Develop skills in designing mathematical models for constructing polynomials to the given data and drawing inferences.
- CO5. Analyze the efficiency of iteration methods.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Skill Based Subject

OPERATIONS RESEARCH – III

- CO1. Know the concept of simulation and simulate a queueing system
- CO2. Understand the overall approach of dynamic programming.
- CO3. Solve nonlinear programming problems using Lagrange multiplier and using Kuhn-Tucker conditions.
- CO4. Apply concepts in optimal scheduling
- CO5. To formulate a model for solving the intractable problems.

Credits: 3 Theory Period of 1 Hour per week over a Semester

SEMESTER - VI

Core XIII: REAL ANALYSIS – II

- CO1. Demonstrate the understanding of continuity, uniform continuity, compactness, connectedness.
- CO2. Understand partitions and their refinement.
- CO3. Determine the Riemann integrability and the Riemann-Stieltjes integrability of a bounded function.
- CO4. Examine the derivatives of function.
- CO5. Acquire skills in writing and analyze the proofs that arise in the context of real analysis.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core XIV: COMPLEX ANALYSIS – II

- CO1. To recognize and apply the Liouville's theorem, the mean-value property of a function and the maximum modulus principle.
- CO2. Demonstrate understanding and appreciation of deeper aspects of complex analysis.
- CO3. Apply residue theorem to compute integrals.
- CO4. Ability to think critically by proving mathematical conjectures and establishing theorems from complex analysis.
- CO5. Classify the nature of singularity, poles and residues.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core XV: MODERN ALGEBRA – II

- CO1. Communicate and understand mathematical ideas and results with the correct use of mathematical definitions, terminology and symbols.
- CO2. Explain the concepts of base and dimension of Vector space.
- CO3. To apply the Gram-Schmidt process to construct an orthonormal set of vectors in an inner product space.
- CO4. Demonstrate competence with the basic ideas of Matrix theory, Vector spaces, Dual spaces, Linear transformation.
- CO5. Have an insight to analyze a real life problem and solve it.

Credits: 6 Theory Period of 1 Hour per week over a Semester

ELECTIVE II: NUMERICAL METHODS –II

- CO1. Familiarize with numerical integration and differentiation, numerical solution of ordinary differential equations.
- CO2. Distinguish methods of Taylor series, Euler's, Modified Euler's and Runge Kutta methods to find solutions of differential equations.
- CO3. Apply the techniques for enormous application in the field of Science and some fields of Engineering.
- CO4. Compute the integrals and derivatives by using the appropriate technique.
- CO5. Find the numerical solution of second order O.D.E by finite difference method.

Credits: 5 Theory Period of 1 Hour per week over a Semester

ELECTIVE III: GRAPH THEORY

- CO1. Identify the properties of different types of graph and their application.
- CO2. Demonstrate knowledge of basic concepts in graph theory.
- CO3. Understand cut graphs, cycle spaces
- CO4. Apply principles and concepts of graph theory in practical situations.
- CO5. Analyze the concepts of Planar graphs.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Skill Based Subject

OPERATIONS RESEARCH -IV

- CO1. Know the principles and applications of information theory.
- CO2. To understand sequencing, replacement problems.
- CO3. Demonstrate skills to achieve their objective using sequencing models.
- CO4. Apply decision making under different business environments.
- CO5. Determine a solution to a rectangular game using simplex method.

Credits: 3 Theory Period of 1 Hour per week over a Semester

NAME OF THE PROGRAM: B.Sc. Physics

PROGRAM SPECIFIC OUTCOMES (PSO)

PSO1 Realize the role of Physics in day life.

PSO2 Communicate explicitly and exchange ideas with regard to the impacts of various components of Physics on environment and society.

PSO3 Understand the theory of relativity, the big bang theory, and the splitting of the atom.

PSO4 The main objective of the department is to discover the talented young people, introducing awareness in them, educating them in the most advanced manner through special programs and producing women physicist and educationalist.

PSO5 To understand the practical and theoretical physics.

Course Outcome

Semester-I

Core I: Mechanics, Properties of Matter and Sound

CO1 Understand and define the laws involved in mechanics.

CO2 This course is based on the study of the mechanics of rigid bodies and their states of matter, and Newton's laws and gravitation and their applications.

CO3 This course includes on introduction of fluids and their motions by developing knowledge of density, heat capacity, pressure & viscosity of liquids.

CO4 To understand the concepts of kinetic energy and potential energy of the system. It's measured by velocity changes of the resting & moving system.

- CO5** To analyze how energy can change from one form to another form. (I.e. electrical energy is converted to the heat energy. e.g. Iron Box).
- CO6** To understand the momentum of the elastic and inelastic bodies (e.g. elastic: spring, balloon; inelastic: car crash).
- CO7** To learn the vibration of wave mechanics produced in waves. Most will understand the all about different wave properties. (I.e. transverse waves & longitudinal waves).
- CO8** To understand the production of sound and sound wave and speed of sound. Identifies the absolute and relative terms of sound wave.

Credits: 6 Theory period of one hour per week over a semester.

Semester-II

Core II: Heat and Thermodynamics

- CO1** The students are to learn the basic principles and concepts of Heat and Thermodynamics.
- CO2** They get ability to understand and solving conduction, convection and radiation process.
- CO3** To design and analyze the performance of heat exchangers and evaporators.
- CO4** Analyze the applications of heat and thermodynamics in various areas and solve the real life problems.
- CO5** They get knowledge about kinetic theory of gases.
- CO6** They understand the thermodynamic laws.
- CO7** To study about the concepts of entropy.

Credits: 6 Theory period of one hour per week over a semester.

Core Practical-I

- CO1** Realize principles and applications of potentiometer, Sonometer, Magnetometer and PN junction diode.
- CO2** The experiment complements some of the material covered in the second year theory course.
- CO3** The student will demonstrate an understanding of the scientific method and an ability to apply the scientific method in practice.
- CO4** They will understand and able to communicate the solution to a problem or the results of a scientific investigation using effective oral.
- CO5** The students develop their capacity for independent and self directed work.
- CO6** They developed an ability to work collaboratively.
- CO7** Improving their creative skills.

Credits:3 Practical period of one hour per week over a semester.

Semester-III

Core III: Optics

- CO1** Remember the behavior of light on passing through lens, prism, grating and thin films.
- CO2** Optics is the heart of many of the powerful scientific instruments.
- CO3** To understand the diffraction, refraction, spectroscopy, laser, etc., (To diffraction spectrometer uses the form of rainbow colors and illuminates by a wide spectrum)
- CO4** To learn the principles of optical modulation and detection of light.
- CO5** To learn the basic & working principles of laser lights. Laser is optical device that emits an extremely intense beam of energy in the form of light.
- CO6** Spectroscopy, laser, and fiber optics also provides a basis study in optics. Fiber optics is the technology of sending information in the form of light through fine structure of transparent materials.
- CO7** Spectroscopy is used to find the dispersion of light and how to form the different colors from monochromatic light.
- CO8** To understand the light as energy and how to measure the speed of light, and wavelength of light.
- CO9** To understand the lens of plane, concave and convex mirrors. And what will happen it combination of two lenses.
- CO10** To analyze the intensity variations of light due to polarization. As light passes through the medium (glass), each colors of visible light is polarized with its own orientation.

Credits:4 Theory period of one hour per week over a semester.

Skill Based Subject: Instrumentation-I

- CO1** To design a basic measuring devices, it can used to handle the instruments and calibrates the devices for transducers like capacitive, piezoelectric, photoelectric effect, photoconductive, ionization, Hall effect transducers and now a days etc.
- CO2** To study the performance characteristics of an Instrumentation system.
- CO3** Its used to Generalized measurement Zero order system first and second order system Dead time element Specification and testing of dynamic response.
- CO4** To study the Pressure Measurements. It's used to deduct Mechanical Pressure measurement devices Bourdon tube Pressure.
- CO5** The Bridgeman, Dead weight tester Low Pressure measurement & The Mc lead, Pirani thermal Conducting, & Knudsen gauge.

- CO6** To study the Flow Measurements and Measure Positive displacement & Flow Obstruction methods Flow measurement by drag effects. Hot wire and Hot film anemometers magnetic flow meters.
- CO7** To study the measurement of temperatures. It used to measure the temperature scales and calculate the temp & day today life also.
- CO8** The ideal gas thermometer temperature measurements by mechanical effects temperature measurements Thermistors Thermoelectric effects.
- Credits:** 5 theory period of three hour per over a semester.

Semester-IV

Core IV: Atomic Physics and Spectroscopy

- CO1** To describe the basic Analysis of positive rays.
- CO2** To understand the structure of atoms.
- CO3** To design and analyze the performance atoms.
- CO4** To design and analyze Magneto optical properties of spectrum.
- CO5** They get knowledge about Photo electric effect.
- CO6** They understand the X-ray spectra.
- CO7** To study about the Planck's law of radiation.

Credits: 4 Theory period of one hour per week over a semester.

Skill Based Subject: Instrumentation- II

- CO1** Use thermal and nuclear radiation detectors.
- CO2** If the students study this course they got ability to use and modify complex electronic and mechanical equipment is high valued.
- CO3** The students should on making measurement and interpreting experimental data provides an important counterpoint is focused on construction.
- CO4** Combine an interest in how things work with a desire to make things work.
- CO5** Instrumentation is the collective term for measuring instruments used for indicating, measuring and recording physical quantities.
- CO6** The students should develop their ability to design, developing, installing, managing and maintaining equipment.
- CO7** For instrumentation II students will understand the pH measurement and the measurements of temperature and heat transfer.
- CO8** The students get knowledge about force, torque, strain, vibration, thermal and nuclear radiation, Air pollution sampling and their all measurements.

CO9 They understanding the behavior of instruments.

Credits: 3 Theory period of one hour per week over a semester.

Core Practical II

CO1 The course continues the development of your expertise in applying physical concepts to practical problems and in learning about experimental techniques and advanced equipment.

CO2 The students will be able to analyze the physical principles involved in the various instruments also relate the principle to new application.

CO3 The students will be able to think innovatively and also improve the creative skills that are essential for Physics.

CO4 To make the measurements using laboratory equipment and perform calculation that verifies the physical principles.

CO5 The student will be able to appreciate the relationship between experiment, theory and computation as scientific techniques.

CO6 The students should understand the elasticity of the solid material while doing the young's modulus experiment.

CO7 Zener diodes are widely used as voltage differences and as shunt regulators to regulate the voltage across small circuits.

CO8 To understand the properties of lens (concave and convex) by using Newton's ring method.

CO9 They get knowledge about dispersion of light (ex. Grating) and how to form the different colors from monochromatic light.

Credits: 2 practical period of one hour per week over a semester.

Semester-V

Core V: Mathematical Physics

CO1 To acquire the Problem solving for students.

CO2 To learn and understand the Lagrange's and Hamiltonian equation.

CO3 The students will be able to apply the equation for Physical problems.

CO4 To analyze the Gamma and Beta functions.

CO5 The students should understand the application of Gamma and Beta functions.

CO6 Based on matrix the students should solve the problems and apply them to relevant problems.

CO7 Understand the basic of Vector calculus.

CO8 To understand the Stoke's and Gauss theorems.

CO9 To derive the problems while using Stoke's and Guass theorems.

Credits: 4 Theory period of one hour per week over a semester.

Core VI: Electronics

CO1 To acquire the Knowledge about electronics instruments.

CO2 To apply it on various electronics instruments

CO3 To gain the knowledge about the development of electronics instruments.

CO4 The students will motivate to apply the principles of electronics in their day-to-day life

CO5 Understand the different types of amplifiers.

CO6 To design the different types of oscillations.

CO7 To apply switching ideas to various devices.

CO8 To analyze the power electronic devices.

CO9 Understand the uses of power electronic devices.

CO10 To design the operational amplifier circuit.

CO11 Based on operational amplifier circuit students should analyze their properties.

Credits: 4 Theory period of one hour per week over a semester.

Core VII: Solid State Physics

CO1 Understand the basic concepts of Crystal structure and properties of solids.

CO2 To know about bond theory and optical properties of solids.

CO3 Understand crystal vibrations: phonon heat capacity and thermal conductivity

CO4 Understand free electron Fermi gas: density of states, Fermi level, and electrical conductivity

CO5 Understand electrons in periodic potential: energy bands theory classification of metals, semiconductors and insulators

CO6 Understand semiconductors: band gap, effective masses, charge carrier distributions.

CO7 Understand metals: Fermi surfaces, temperature dependence of electrical conductivity

CO8 To analyze the magnetic materials for utilization in varied fields.

CO9 Understand the properties of matter and classifications - polarization

CO10 To understand the concept of Free electron theory.

CO11 To learn the principles of Hall effect and also understand their importance.

CO12 Understand the relationship between semiconductors devices and their applications.

Credits: 4 Theory period of one hour per week over a semester.

Core VIII: Electricity and magnetism

- CO1** Understand the basic concepts of electric and magnetic fields.
- CO2** Understand the concept of conductors, dielectrics, inductance and capacitance.
- CO3** Gain knowledge on the nature of magnetic materials.
- CO4** Gain knowledge on EM waves, propagation and their properties. .
- CO5** To understand the effects of Thermo electricity.
- CO6** To know the application of Thermodynamics.
- CO7** The students should know about varying current in a LCR circuit.
- CO8** To understand the Dynamics of charged particles.

Credits:4 Theory period of one hour per week over a semester.

Skill Based Subject: Instrumentation- III

- CO1** It will help entry level skills in industrial instrumentation, maintenance and calibration.
- CO2** Understand the Principles of Bio-medical instruments.
- CO3** The students will understand the working of basic electromagnetic and electronic instrument.
- CO4** To appropriately chose electronic component.
- CO5** .To carryout the minimal testing and maintenance of electronics equipment.
- CO6** To design the simple electronic circuits using multi-meters and oscilloscopes.
- CO7** The students will have the ability to use test equipment, hand tools and techniques of soldering.
- CO8** To interpret results of Bio-medical measurements.

Credits: 3 Theory period of one hour per week over a semester.

Semester-VI

Core IX: Quantum Mechanics and Relativity

- CO1** Understand the origins of quantum mechanics.
- CO2** To acquire the knowledge of wave nature of matter and its experimental verification.
- CO3** To understand the idea of wave function.
- CO4** To understand the Heisenberg uncertainty relations and apply it to problems.

- CO5** To verify problems in atomic and nuclear physics.
- CO6** Understand the Schrodinger wave mechanics and operator formalism.
- CO7** Solve the Schrodinger equation for simple 1D time-independent potentials.
- CO8** Appreciate the importance and develop an understanding of angular momentum.
- CO9** Spot, identify and relate the eigenvalue problems for energy, momentum, angular momentum and central potentials.
- CO10** Develop the idea of quantum statistical mechanics.
- Credits:** 6 Theory period of one hour per week over a semester.

Core X: Nuclear Physics

- CO1** To understand the ideas of basics nucleus and their energy.
- CO2** To understand the procedures for nuclear fission and fusion.
- CO3** Understand the properties of nuclear forces.
- CO4** Understand the relationship between energetic particle and matter.
- CO5** To study the detectors and accelerators.
- CO6** Ability to apply fundamental conservation laws and symmetries to judge the viability of production and decay processes for nuclei and elementary particles.
- CO7** Ability to have insight into the interplay between theory, models, and data from modern experiments.
- CO8** A basic understanding of nuclear properties and models that describe the quantum structure, decay, and reactions of nuclei.
- CO9** To improve the knowledge about the Standard Model of elementary particles and interactions.
- CO10** To understand basic knowledge about the quark model.
- Credits:** 5 Theory period of one hour per week over a semester.

Elective II A: Digital and Microprocessor

- CO1** It give description for the students in order to make use of digital devices and microprocessor..
- CO2** To learn the concepts of logic circuits.
- CO3** To draw and construct the logic circuit for any boolean equation.
- CO4** To apply the Karnaugh map to simplify Boolean equation and draw a simplified circuit. **CO5** To acquire the basic knowledge of binary addition.
- CO6** To understand the function of data processing and arithmetic operation.
- CO7** To understand the Mnemonic and Opcode in the microprocessor.
- CO8** To understand the action of flip flop.
- CO9** Learning basic programming with microprocessor 8085
- CO10** To develop the programming skills using the basic concepts.
- Credits:** 4 Theory period of one hour per week over a semester.

Elective IA: Principles of Programming Concepts and C Programming

- CO1** To design features of programming languages, and justify their own design decisions.
- CO2** Critically evaluate what paradigm and language are best suited for a new problem.
- CO3** To solve problems using functional and object-oriented paradigm.
- CO4** Use ideas from various paradigms when programming in a language of different paradigm.
- CO5** To use C programming to solve Physics problems.
- CO6** To develop logics which will aid in programs and applications.
- Credits:** 4 Theory period of one hour per week over a semester.

Elective IIIA: Object Oriented Programming with C++

- CO1** Understand C++ improves C with object-oriented features.
- CO2** To understand the concept of data abstraction and encapsulation
- CO3** To learn how to design C++ classes for code reuse
- CO4** To learn the syntax and semantics of the C++ programming language.
- CO5** To learn how to write inline functions for efficiency and performance.
- CO6** To learn how to use exception handling in C++ programs.
- CO7** To learn about constructors, destructors and inheritance in C++ programming.
- CO8** To develop the C++ program and applications.
- Credits:** 5 Theory period of one hour per week over a semester.

Semester V&VI

Core Practical III : Electronics Alone

CO1 To understanding of OP-AMP based applications like inventor, integrator and differentiator.

CO2 To design different types of Power supplies, Amplifiers and Oscillators.

CO3 To analyze the characteristics of various Electronic devices like BJT, UJT, LDR, and Solar cell.

CO4 To acquire the knowledge of the characteristics of an operational amplifier.

CO5 To transform the principles of Basic Electronics into Experimental techniques.

CO6 To gain knowledge about different electronic gadgets.

Credits: 2 practical period of one hour per week over a semester.

Core Practical IV :Digital and Microprocessor

CO1 Understanding of digital systems.

CO2 Ability to use IC in different applications like, to verify laws and theorems of Boolean algebra, to study basic combi-national circuits etc.

CO3 To analyze the different types of digital circuits and their applications.

CO4 Ability to use the microprocessor kit.

Credits:2 practical period of one hour per week over a semester.

Practical V :C and C++ Programming

CO1 To develop Programming concepts in C and C++.

CO2 To apply Programming concepts of C and C++ to various programmes.

CO3 Write C and C++ programmes for Physics oriented problems.

CO4 Execute programmes in C and C++.

CO5 To analyze the programming concepts for Physics problems.

Credits: 3 practical period of one hour per week over a semester.

Skill Based Practical :Instrumentation

- CO1** To acquire the knowledge in working with different laboratory instruments.
- CO2** To service and rectify the defects in laboratory instruments like spectrometer, telescope etc.
- CO3** To examine some of the simple house hold instruments like iron box, mixie etc. and rectify the problems.

Credits:3 practical period of one hour per week over a semester.

Allied Physics I

- CO1** Understand and define the laws involved in gravitation and elasticity.
- CO2** Based on physics, system understanding that can predict the progress of climate changes, development of new material and technology.
- CO3** For allied physics paper the students should understand the basic principle of mechanics, heat & sound.
- CO4** The motion of the particles, liquid & the propagation of heat & sound waves was regarded by students.
- CO5** The unit of solar physics they studied about the solar material as working and their principles.
- CO6** For electricity and magnetism students get knowledge about, how the electric circuit works and the magnetic field was created.

Credits:

1. **Mathematics:** 4 Theory period of one hour per week over a semester.
2. **Chemistry:** 4 Theory period of one hour per week over a semester.

Allied Physics II

- CO1** understand the concept of laser property, Digital electronics and to recognize their applications in real life.
- CO2** This paper is given to the knowledge for students regarding the Motion of the Particles, Liquids and Semiconducting Materials, Laser Lights etc.
- CO3** The student will be able to understand the basic principles of Mechanics and Wave Functions, Electronic devices and Nuclear Reactions.

- CO4** The students will understand the binding energy of the every Particles and Molecular, Mass of the particles etc. To learn the basic concepts of the Nuclear Reactions of Fission and Fusion process.
- CO5** The students should develop their knowledge of the semiconducting materials, diodes and their applications. To understand the principles of LED (Light Emitting Diode) & LCD (Liquid Crystal Diode).
- CO6** To learn the basic principles and working structure of Television and Receivers. And to understand the principle and applications of RADAR Systems.
- CO7** To understand the general applications of Integrated Circuits and Operational Amplifier.
- CO8** To learn and develop the Digital Electronics circuit diagram and basic principles and working knowledge.
- CO9** To understand number systems in computer. How to store the numbers in computerized devices. And to learn their operations of Addition Subtraction Conversion (Analog to Digital & Digital to Analog) etc.

Credits:

1. **Mathematics:** 4 Theory period of one hour per week over a semester.
2. **Chemistry:** 4 Theory period of one hour per week over a semester.

Allied Physics Practicals

- CO1** The course continues the development of your expertise in applying physical concepts to practical problems and in learning about experimental techniques and advanced equipment.
- CO2** The students will get knowledge about to choose appropriate tools and methods to solve scientific problems.
- CO3** The students should evaluated possess ability to accurately record, analyses, interpret and critically.
- CO4** The students should understand the elasticity of the solid material while doing the young's modulus experiment.
- CO5** A sonometer is a device for demonstrating the relationship between the frequencies of the sound.
- CO6** In electronics a logic gate is an idealized or physical device implementing a Boolean function, so that the students will perform the logic operation.
- CO7** While doing solid prism experiment that can be given knowledge about the reflection of light or to split light into components with different polarization.
- CO8** To analyze the characteristics of various diodes and construct power supply.

Credits:

1. **Mathematics:** 3 Practical period of one hour per week over a semester.
2. **Chemistry:** 2 Practical period of one hour per week over a semester.

Name of the Program: B.Sc. Chemistry

Program Specific Outcome (PSO):

PSO1: Apply chemistry knowledge to solve the problems in various areas

PSO2: Students should have a working knowledge of the main area of chemistry organic, Inorganic, physical, analytical, textiles and dye chemistry

PSO3: To understand the important concepts of chemistry

PSO4: Students should be able to perform and understand chemical reactions.

PSO5: Identify the study of the compositions structure, properties, and reaction of matter.

PSO6: Have enough chemistry knowledge to go for higher studies and become entrepreneur.

Course Outcome (CO)**SEMESTER – I****Core I: Core Chemistry Paper - I**

CO1: To learn the periodic table, electron affinity and negativity, and hybridizations and geometry.

CO2: To understand IUPAC name, nomenclature of acyclic alkane, alkene and alkyne.

CO3: Students learn about polar effect and cycloalkanes and types of the reaction.

CO4: To understand liquid crystals concept and theory of Einstein, Compton, and de Broglie

Planck's, black body radiation (wave length determination only)

CO5: To develop the laws of thermodynamics.

Credits: 7 Theory period of 1 hour for 6 days order over a semester (90) days.

SEMESTER - II

Core II: Core chemistry Paper - II

CO1: This paper presents the concept of co-ordination chemistry.

CO2: To understand aromaticity and thermodynamics.

CO3: To enable the students to learn about acids and bases concept.

CO4: To gain knowledge in chemical reactions.

CO5: To understand heat, temperature and volume.

Credits: 7 Theory period of 1 hour for 6 days order over a semester.

Practical – I: Core Chemistry Practical – I (Inorganic Qualitative Analysis)

CO1: To apply the knowledge of science and fundamentals.

CO2: To identify the formula and structure of inorganic substance.

CO3: To communicate technically.

CO4: To handle glassware's apparatus.

CO5: To use techniques, skills necessary for inorganic practical.

Credits: 3 Practical periods of 3 hours for 6 days order over a semester.

SEMESTER – III

Core III: Core chemistry Paper - III

CO1: To identify general methods of extraction.

CO2: To understand chemistry of carbonyl compounds -I

CO3: To understand chemistry of carbonyl compounds -II

CO4: To use techniques of geometrical isomerism.

CO5: To understand Bio-organic chemistry.

Credits: 3 Theory period of 1 hour for 6 days order over a semester.

Core IV: Core chemistry Paper - IV

CO1: To enable the students to understand the second laws of thermodynamics

CO2: To understand the concept of chemical potential.

CO3: To understand the adsorption and catalysis.

CO4: To learn the adsorption chromatography

CO5: Ability to understand the c programming.

Credits: 3 Theory period of 1 hour for 6 days order over a semester.

Skill based subject - 1: Chemistry of Natural and Synthetic Fibers - I

CO1: To understand basic knowledge of textiles chemistry.

CO2: To learn different group of fibers (natural and synthetic fibers)

CO3: Students also gain good knowledge of various textiles fibers.

CO4: Textiles chemistry also learn the art of blending materials.

CO5: Students will work as a part of the research and development team.

Credits: 2 Theory period of 1 hour for 6 days order over a semester.

SEMESTER - IV

Core V: Core Chemistry Paper –V

CO1: Students will gain an understanding of the fundamentals of electronic structure and bonding in conjugated and aromatic system.

CO2: Students learn the bonding models, structure, reactivity's and applications of simple Inorganic molecules, metals and organo metals.

CO3: Students learn the preparation, structure and synthetic applications of amines.

CO4: Students ability to understand the phase rules, diagram and one, two components system.

CO5: To understand ideal and non-ideal solutions.

Credits: 4 Theory period of 1 hour for 6days order over a semester

Skill based subject - II: Technology of Dyeing of Natural Fibers

CO1: To understand the coloring agents.

CO2: To learn to Different types of reactive dyes.

CO3: To learn the classification of naphtha's cold and hot dissolution methods.

CO4: To understand the types of vat dyes.

CO5: To learn the advantage and disadvantages of chemical dyes.

Credits: 3 Theory period of 1 hour for 6 days order over a semester

Practical – II: Core Chemistry Practical – II (Organic and Volumetric Analysis)

CO1: Apply principles of chemistry to the observation of substances experiencing physical
Or chemical changes.

CO2: Learn the safety requirements and methods needs to work in chemistry.

CO3: All students must be able to readily identify glassware commonly used in the
Chemistry laboratory and know how to properly utilize the glassware.

CO4: How to properly clean glassware at the end of experiments

CO5: Students will know the disposal of chemicals.

CO6: To understand the normality and calculation of solutions.

Credits: 3 Practical periods of 3 hours for 6 days order over a semester.

SEMESTER - V

Core - VI: Core Chemistry Paper - VI

After the completion of course the students learns about

CO1: To learn the basic structure of metals and alloys

CO2: To understand the synthesis principle of working, safety measures of nuclear reaction.

CO3: To gain an understanding of reduction, methods and uses of isotopes.

CO4: To know the different isomerism, magnetic properties, bond theories of co-ordination compounds.

CO5: To develop skill in the solubility of compounds.

Credits: 5 Theory periods of one hour for six days order over a semester.

Core - VII: Core Chemistry Paper - VII

After the completion of course the students learns about

CO1: To able to get idea about optical activity of compounds.

CO2: To understand the mechanism of different molecular rearrangement reactions.

CO3: To familiarize with the structure of carbohydrates.

CO4: To know the classification, preparation and properties of amino acids and proteins.

C05: To acquire knowledge about the chemistry of heterocyclic compounds.

Credits: 5 Theory periods of one hour for six days order over a semester.

Core - VIII: Core Chemistry Paper - VIII

After the completion of course the students learns about

CO1: To interpret the electrical conduction in metals and solutions.

CO2: To develop knowledge about ionic equilibrium and hydrolysis of salts.

CO3: To enable student to learn the concept of electrochemical cells.

CO4: To remember the electrodes and its applications.

CO5: To understand and apply methods of constructing fuel cells.

Credits: 5 Theory periods of one hour for six days order over a semester.

Core - IX: Core Chemistry Paper - IX

After the completion of course the students learns about

CO1: To develop skill in the analytical techniques.

CO2: To apply and interpret the analytical data.

CO3: To deduce and analyze the errors from statistical texts and data.

CO4: To understand the theory of quantitative analysis.

CO5: To learn about different gravimetric methods.

Credits: 4 Theory periods of one hour for six days order over a semester.

Elective-I: Polymer Chemistry

After the completion of course the students learns about

CO1: To understand the classification and methods of preparation of polymers.

CO2: To know the different types of polymerization.

CO3: To develop skill in properties of polymers.

CO4: To Practice the molecular weight determining methods.

CO5: To learn the preparation and application of industrial polymers.

Credits: 4 Theory periods of one hour for six days order over a semester.

Skill based subject - III: Water & Effluent treatment and pollution control

After the completion of course the students learns about

CO1: Students acquire knowledge in urbanization, biodiversity and water pollution.

CO2: To recollect the importance of water.

CO3: To develop skill in the general study on water analysis.

CO4: To understand the effect of effluents and general treatment procedure of water.

CO5: To analyze the effect of air pollution and noise pollution.

Credits: 3 Theory periods of one hour for six days order over a semester.

SEMESTER VI

Core - X: Core Chemistry Paper - X

After the completion of course the students learns about

CO1: To understand the instrumentation of spectra.

CO2: To know the various types of spectra.

CO3: To develop knowledge about terpenoids and vitamins.

CO4: To analyze the classification, synthesis, structural elucidation of alkaloids and hormones.

CO5: To able to get idea about chemotherapy and drugs.

Credits: 5 Theory periods of one hour for six days order over a semester.

Core - XI: Core Chemistry Paper- XI

After the completion of course the students learns about

CO1: To study the electrical properties application of simple molecules.

CO2: To enable the students to learn about the magnetic properties of molecules.

CO3: To get idea about the rate laws and kinetic of reactions.

CO4: To understand the experimental techniques and theoretical aspects of reaction rate theory.

CO5: To enable the students to understand the concept of photo chemistry.

Credits: 5 Theory periods of one hour for six days order over a semester.

Elective – II: Dye Chemistry

After the completion of course the students learns about

CO1: To interpret the concept of colour and constitution.

CO2: To understand the classification of dyes.

CO3: To develop knowledge of synthesis of dyes.

CO4: To analyze the synthesis and applications of quinonoid dyes.

CO5: To acquire skill in pigments, reactions, application of dyes in some areas.

Credits: 4 Theory periods of one hour for six days order over a semester.

Elective – III: Environmental Chemistry

After the completion of course the students learn about

CO1: To enable the concept, scope of environmental chemistry.

CO2: To study about the biological cycles and their significance.

CO3: To acquire knowledge about water pollution and eutrophication.

CO4: To analyze the air pollution, particulates and its quality standards.

CO5: To know the effects prevention and control methods of thermal, noise and radioactive pollution.

Credits: 4 Theory periods of one hour for six days order over a semester.

Practical - III: Core XV – Practical for Elective Subjects

CO1: Use the physical constants in the analysis of the substance.

CO2: Prepare inorganic complexes.

CO3: Perform organic transformation involving substitution and oxidation reactions.

CO4: Use effectively the Complexometric method to estimate hardness of water.

CO5: Colorimetric methods in the estimation of various salts and ions.

Credits: 3 practical periods of 3 hours for six days order over a semester.

Practical: Skill based subject - IV Textile Chemistry Practical

CO1: Analyze the quality of water for industrial use as well as various substances of industrial use.

CO2: Learn the various methods of dye preparation and dyeing.

Credits: 2 practical periods of 2 hours for six days order over a semester.

NAME OF THE PROGRAM: B.Sc. Computer Science

Program Specific Outcome(PSO):

- PSO1 : To create a learning environment to transform the students with strong fundamentals in computer science, analytics, programming and problem solving.
- PSO2 : To provide exposure to students to latest tools & technologies in area of computer science
- PSO3 : There are brilliant job outlooks for Computer Science graduates in the recent Scenario.
- PSO4 : Computer Science graduates are competent in academic, Research, Industry, Government, Private and Business organizations with the acquired programming skills.
- PSO5 : The software and IT companies are the major employers of Computer Science graduates.

Course Outcome(CO)

SEMESTER – I

Core 1: Computing Fundamentals and C Programming

- CO1 : Understand the Computer fundamentals and the C programming language concepts.
- CO2 : Study the concept of C character set, identifiers and keywords, variable names.
- CO3 : Different data type & sizes, declaration, statements.
- CO4 : Gain knowledge about types of Operators Standard and Formatted I/O
- CO5 : Choose the Loops and Decision Making Statements to solve the problem.

CO6 : Implement different operations on Arrays.

CO7 : Use Functions to solve the given problem.

CO8 : Understand Pointers, Structures and Unions.

CO9 : Develop C programs using pointers Arrays and file management

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core 2: Digital Fundamentals and Computer Architecture

CO1 : Understand different Number systems, Codes, LogicGates, Boolean laws & Theorems.

CO2 : Simplify the Boolean functions to the minimum number of literals using Karnaugh Map.

CO3 : Gain knowledge about combinational circuits and sequential circuits.

CO4 : Can design various synchronous and asynchronous circuits using flip flop.

CO5 : Design Counters, Shift Registers using J-K / D Flip Flop.

CO6 : Discuss various concepts in input and output organization.

CO7 : Differentiate different kinds of memories and to know their performance.

CO8 : Analyze architectures and computational designs concepts related to architecture organization and addressing modes

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Allied 1: Mathematical Structures for Computer Science

CO1 : Learn mathematical structures for computer based applications like Matrices, statistical and numerical methods for Computer Science.

CO2 : Apply Gauss- elimination, Gauss Jordan, Gauss Seidal methods to find inverse of a matrix and Eigen vectors to find canonical form of a quadratic form.

CO3 : NumericalDifferentiations by usingvarious methods to solve applied problems.

CO4 : Solve problems using Measures of central tendency.

CO5 : Learn Regression and Correlation

Credits: 4 Theory Period of 6 Hour per week over a Semester.

SEMESTER - II

Core 3: C++ Programming

CO1 : Apply and implement major object oriented concepts like message passing, function overloading, operator overloading and inheritance to solve real-world problems.

CO2 : Learn Objects, Classes, Methods, Constructors and Destructors.

CO3 : To study the designing of complex classes: Friend Functions and Static member functions, Inline functions.

CO4 : To be taught about Inheritance: Single Inheritance, Multiple Inheritance, Multi-level Inheritance, Hierarchical Inheritance and Hybrid Inheritance

CO5 : For resolving run-time errors implementation of Try - Catch and finally block using Exception Handling mechanism.

CO6 : Develop applications using Console I/O and File I/O to deal with large data set.

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Core Lab 3: Internet Basics

CO1 : Familiarise students with Internet structure and with basic protocols.

CO2 : Students will receive experience with the Internet, World Wide Web.

CO3 : Use Internet/Web services as a resource for learning and discovery.

CO4 : Explore career opportunities through Online Job Portal.

CO5 : Identify and apply the online information resources

CO6 : Inspect and utilize the appropriate Google Apps for education effectively

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Allied 2: Discrete Mathematics

CO1 : Understands Sets and their algebra, duality, power sets and partitions. Principle of Strong Mathematical Induction, Product sets

CO2 : Analyze various binary relations characteristic function and Equivalence relations

CO3 : Can able to verify the correctness of an argument using laws of logic, truth tables, propositions and quantifiers.

CO4 : Learn the notions of languages, finite state automata, Regular Expressions and regular languages – Grammar – Types of grammars

CO5 : Use graph algorithms for suitable applications.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

SEMESTER - III

Course Outcome : Core 4: Data Structures

CO1 : Able to choose an appropriate data structure to specific problem

CO2 : Choose among alternative data structures to solve specific data-representation and algorithmic problems.

CO3 : Students will be able to define basic static and dynamic data structures and relevant standard algorithms for them: stack, queue, dynamically linked lists, trees, graphs, heap, priority queue, hash tables, sorting algorithms

CO4 : Demonstrate the concept of trees and its applications

CO5 : Design and implement various sorting and searching algorithms for applications and understand the concept of file organizations

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core 5: Java Programming

CO1 : Implement Object Oriented Programming Concepts (class, constructor, overloading, inheritance, overriding) in java.

CO2 : Explain the fundamental concepts and features of Java Programming language.

CO3 : Use and create Packages and Interfaces in a Java program

CO4 : Develop Graphical User Interface applications and Web based applications in Java by importing applet, AWT

CO5 : Implements Multithreading and Exception Handling in Java.

CO6 : Use of Input/OutputStreams in java.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Allied 3: Computer Based Optimization Techniques

CO1 : Solve LPP using different techniques.

CO2 : Learn about the managerial concepts like decision making, optimization, etc.

CO3 : Be exposed to Queueing theory and be familiar with Game theory

CO4 : Understanding various mathematical applications in industries.

CO5 : Decision making for real time environment.

CO6 : Study PERT –CPM calculations

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Skill-1: Software Engineering & Software Project Management &

Skill -2: Software Project Management Lab

CO1 : Understand various phases of software layers and Data Modeling.

CO2 : Recognize different techniques of software testing, reusability and maintenance.

CO3 : Understand how to manage projects and project planning and organization

CO4 : Justify the strategies for testing, reusability etc. to reduce cost of development and / or maintenance.

CO5 : To demonstrate the role and responsibilities of software engineers in various phases of software development.

CO6 : Describe Software Configuration Management and Risk Management.

CO7 : Studies Estimation, Design and development phases.

Credits: 3 Practical period of 3 hour per week over a semester

Core 6: System Software and Operating Systems

CO1 : Able to understand the role played by system software's such as assembler, interpreter, linker, loader and compilers.

CO2 : Studies various machine architectures and explains various loading, linking Facilities.

CO3 : Able to understand machine independent and dependent Compiler features.

CO4 : Understands Operating System Process Concepts and Interrupt Processing.

CO5 : Learns various process management concepts including scheduling, synchronization, deadlocks and multithreading

CO6 : Student will master issues related to Analyze the need for scheduling algorithms and implement different algorithms used for representation, scheduling, and allocation in DOS and UNIX operating system.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core 7: LINUX and Shell Programming

CO1 : Learns Operating systems LINUX.

CO2 : Describe Directory & File commands in LINUX.

CO3 : To learn the important LINUX library functions and system calls.

CO4 : Apply and change the ownership and file permissions using advance Unix commands.

CO5 : Build Regular expression to perform pattern matching using utilities and implement shell scripts for real time applications.

CO6 : Usage of Conditional Execution in Shell Scripts.

Credits: 3 Practical period of 3 hour per week over a semester

SEMESTER - IV

Allied 4: Business Accounting

CO1 : Conceptually define accounting and bookkeeping

CO2 : Identify the accounting rules required for business enterprises,

CO3 : Apply the accounting rules in determining financial results, prepare financial statements, compare the specificity of different accounts within the accounting policies,

CO4 : Understands the basics of accounting principles and journalising.

CO5 : Can able to prepare trading, profit and loss account and balance sheet with simple adjustments.

CO6 : Will prepare cost sheet with simple adjustments

CO7 : Knows Planning for Budgetary Control.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core 8: RDBMS And Oracle

CO1 : Master the basic concepts and appreciate the applications of database systems.

CO2 : Master the basics of SQL and construct queries using SQL.

CO3 : Be familiar with a commercial relational database system (Oracle) by writing SQL using the system.

CO4 : Be familiar with the relational database theory, and be able to write relational algebra expressions for queries.

CO5 : Master sound design principles for logical design of databases, including the E-R method and Normalization approach.

CO6 : Usage of DML and TCL statements.

CO7 : Master the basics of PL/SQL Composite Data types like Procedures, Functions, Packages and Triggers.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core 9: Visual Programming – Visual Basic & Visual C++

(For 2015 batch- Semester-V)

CO1 : To introduce the concepts of visual programming.

CO2 : Demonstrate knowledge of programming terminology and how applied using Visual Basic

CO3 : Implement SDI and MDI applications using forms, dialogs and other types of GUI

components.

CO4 : Demonstrate understanding of Visual Basic & Concept about form Project, Application, Tools, Toolbox, Controls & Properties.

CO5 : To introduce GUI programming using Microsoft Foundation Classes.

CO6 : Gain both a conceptual understanding of specification and GUI design issues and their implementation, and hands-on experience implementing an IDE.

CO7 : Attain a good practical skill of managing ODBC and Data Access Objects

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Elective I : Computer Networks

CO1 : Student will be able to remember the organization of computer networks and the reasons for having variety of different types of networks.

CO2 : Understands the concepts of OSI and the TCP - IP reference models

CO3 : Learn the concepts of error detection & correction methods

CO4 : Working of Internetworking & devices, Routing techniques

CO5 : Describe protocols like DNS, SMTP, SNMP, FTP, HTTP etc.

CO6 : Students will get the concepts of Security

CO7 : Students will get the concepts of some Modern topics(like ISDN services & ATM)

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Skill-3: Software Testing & Skill-4: Software Testing Lab

CO1: Understand the importance of software quality/software testing and apply software testing techniques for information systems development.

CO2: Generate test cases from software requirements using Black box testing techniques for continuous quality improvement.

CO3: Identify the test cases from Source code by means of white box testing techniques , understand flow graphs and apply path testing

CO4: Apply software testing techniques in commercial environments and assess the adequacy of test suites using control flow, data flow and program mutation.

CO5: Identify the inputs and deliverables of the testing process and work together as a team in preparing a report.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core 10: Graphics And Multimedia

CO1: Explain applications, principles ,commonly used and techniques of computer graphics and algorithms for Line-Drawing, Circle- Generating and Ellipse-Generating.

CO2: Students will get the concepts of 2D and 3D, Viewing, Curves and surfaces, Hidden Line/surface elimination techniques

CO3: Studies concepts of Multimedia Systems, Text, Audio and Video tools

CO4: Learn MIDI Image and Video Image, synchronization accuracy specification factors

CO5: Creates Animation with special effects using algorithms

CO6: Compressing audio and video using MPEG-1 and MPEG-2

Credits: 3 Practical period of 3 hour per week over a semester

Core 11: Project Work Lab

CO1: Formulate a real world problem and develop its requirements develop a design solution for a set of requirements.

CO2: Test and validate the conformance of the developed prototype against the original requirements of the problem.

CO3: Work as a responsible member and possibly a leader of a team in developing software solutions.

CO4: Express technical and behavioral ideas and thought in oral settings.

CO5: Participate in and possibly moderate, discussions that lead to making decisions

CO6: Express technical ideas, strategies and methodologies in written form

CO7: Prepare and conduct oral presentations

CO8: Self learn new tools, algorithms, and/or techniques that contribute to the software solution of the project

CO9: Generate alternative solutions, compare them and select the optimum one.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Elective II: Artificial Intelligence And Expert Systems

CO1: Students will get the concepts of Artificial intelligence, Intelligent Agents And issues in the design of search programs.

CO2: Students will get the concepts of Search techniques Adversarial search And Heuristic search strategies.

CO3: Students will get the concepts of Knowledge & reasoning of predicate logic and Representing knowledge using rules, Probabilistic reasoning,

CO4: Students will get the concepts Natural Language Processing, Learning and Expert Systems Planning.

CO5: Students will get the concepts of Basic Knowledge of Programming Language like Prolog & Lisp.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Elective III: Data Mining

CO1: Understanding the principles of data mining.

CO2: Know a range of techniques for data mining and where they can be applied.

CO3: Become aware of ethical issues that are present in data mining applications.

CO4: Use classification methods and prediction techniques on transaction databases.

CO5: Understand various clustering techniques for categorizing data.

CO6: Understand methods for outlier analysis.

CO7: Analyze transaction databases for association rules.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

NAME OF THE PROGRAM: B.Com

SEMESTER I

CORE I: PRINCIPLES OF ACCOUNTANCY

After the completion of course the students should

CO 1 : Understand the basic concepts and conventions of Accountancy.

CO 2 : To gain knowledge about the basic accounting practices.

CO 3 : able to prepare the final accounts of a business concern.

CO 4 : Be aware of the accounting procedures followed in different business.

CO 5 : Understand the reasons for difference in a bank account with that of the accounts

Prepared and methods to reconcile the difference.

Credits: 4 Theory Period of 5 Hour per week over a Semester

CORE II : BUSINESS ORGANISATION AND OFFICE MANAGEMENT

After the completion of course the students should

CO 1 : Understand the nature and types of business organization.

CO 2 : Develop an idea about the various sources of finance of a business

CO 3 : Gain knowledge about the function and trading procedure of stock exchange

CO 4 : To analyze the location of the business

CO 5 : To know about the usage of equipments and computers in a business organization.

Credits: 4 Theory Period of 5 Hour per week over a Semester

ALLIED PAPER I : AGRICULTURAL ECONOMICS OF INDIA

After the completion of course the students should

CO 1 : To enable the student to learn the importance of agriculture in Indian economy.

CO 2 : To provide basic knowledge about agriculture labour and mechanization of agriculture.

CO 3 : To enable the students to learn the basic concept of agriculture marketing and pricing.

CO 4 : To understand the various financial institution that provides assistance to agriculturist.

CO 5 : Student should have well versed knowledge on the progress of agriculture.

Credits: 4 Theory Period of 6 Hour per week over a Semester

SEMESTER II

CORE III : FINANCIAL ACCOUNTING

After the completion of course the students should

CO 1 : Should understand the basic concept of depreciation.

CO 2 : Be able to develop an idea of investment accounts.

CO 3 : Be aware of the basic conventions on departmental accounts.

CO 4 : Develop basic idea of hire purchase and installment accounting

CO 5 : Understand the procedure followed in branch of a business organization.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

CORE IV : PRINCIPLES OF MARKETING

After the completion of course the students should

CO 1 : Develop an idea of marketing and its modern concepts

CO 2 : Understand the modern methods and recent trends in marketing.

CO 3 : Be able to understand and analyse consumer behavior

CO 4 : Understand the marketing function and the mix for the successful marketing activities

CO 5: Be aware of marketing and government loss that assist the marketing procedure.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

ALLIED PAPER II : ECONOMIC ANALYSIS

After the completion of course the students should

CO 1 : Understand the basic concepts of economics

CO 2 : Develop an understanding on the demand and supply of a commodity in economics

CO 3 : Be able to gain knowledge on the factors of production and theories assisting them.

CO 4 : Get an idea of pricing a product

CO 5 : Know the concept behind the pricing of factor of production. .

Credits: 4 Theory Period of 6 Hour per week over a Semester.

SEMESTER III

CORE V :HIGHER FINANCIAL ACCOUNTING

After the completion of course the students should

CO 1 : Have a thorough knowledge on the basic concepts of partnership accounting

CO 2 : Understand the procedures followed in higher financial accounting.

CO 3 : Be able to have complete knowledge on the accounting practice followed in a firm from the formation till winding up

CO 4 : Know the accounting practice prevailing in the partnership firm and allied aspects

CO 5 : Develop an understanding on voyage and human resources accounting.

Credits: 4 Theory Period of 7 Hour per week over a Semester.

CORE VI : COMMERCIAL LAW

After the completion of course the students should

CO 1 :Be aware of the fundamentals of law relating to business.

CO 2 :Gain knowledge on the various law pertaining to commercial activities

CO3 :Develop idea about the persons eligible to enter in to a contract.

CO 4 :Understand the law governing that principal agency business

CO 5 :Have complete knowledge about law on contract of indemnity and guaranty

Credits: 4 Theory Period of 6 Hour per week over a Semester.

CORE VII : PRINCIPLES OF MANAGEMENT

After the completion of course the students should

CO 1 :To enable the students to know the concept of management

CO 2 : To make the students to understand the elements of effective management

CO 3 : Get an opportunity to examine and applied appropriate concept about the managing in business efficiently.

CO 4 :To know the importance of motivation and communication in management

CO 5 :Get an opportunity to examine the over all management.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

ALLIED III : MATHEMATICS FOR BUSINESS

After the completion of course the students should

CO 1 : To enable the students to apply mathematics knowledge to solve big problems

CO 2 : To know the basic concept in matrix

CO 3 : Enable the student to determine integral calculus

CO 4: To know the linear programming problems and formatting by graphical method solution

CO 5: The student should have understand the basic concept and hoe to use mathematical techniques to solve the modern big problems.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

SKIL BASED SUBJECT I : BUSINESS APPLICATION SOFTWARE – I

After the completion of course the students should

CO 1 :Understand the basic concept of MS office

CO 2 :Able to gain knowledge on the basic functions to be performed using a computer

CO 3 :Know in detail the various area of MS word and MS Excel

CO 4 :Able to work in a spreadsheet

CO 5 :Have a thorough knowledge on the application of MS Word and MS Excel

Credits: 3 Theory Period of 2 Hour per week over a Semester

Practical Period of 1 Hour per week over a Semester

SEMESTER IV

CORE VIII : CORPORATE ACCOUNTING – I

After the completion of course the students should

CO 1 :Should have a thorough knowledge on the accounting practice in issue and redemption of shares and debentures

CO 2 :Be able to prepare final accounts of companies as per the companies act

CO 3 :Understand the methods of valuing goodwill

CO 4 :Gain thorough knowledge on the accounting procedures followed during the liquidation of companies

CO 5 :Have a complete understanding on the accounting practice prevailing in the corporate.
Credits: 4 Theory Period of 5 Hour per week over a Semester

COMPUTER APPLICATION IN BUSINESS

After the completion of course the students should

CO 1 :Study the development of computers and their components in each stage

CO 2 :Develop an idea of software, programming language and operating system.

CO 3 :Study the concept of developing database and its maintenance using computers in a business concern

CO 4 :Analyze the importance of management information system and networking in a business

CO 5 :Be aware and perform various activities using computers in day to day life.

Credits: 4 Theory Period of 4 Hour per week over a Semester

CORE X : COMPANY LAW AND SECRETARIAL PRACTICE

After the completion of course the students should

CO 1 : Understand the provisions of company act and secretarial work relating to companies act

CO 2 : Study the legal formalities and documents to be prepared during the formation and winding up of a company

CO 3 : Beware of the legal provision on the board of directors, their qualifications and powers.

CO 4 : Gain knowledge on the role of company secretary in the regular business activities of a company

CO 5 :Have a thorough knowledge on the proceedings of company meeting.

Credits: 4 Theory Period of 4 Hour per week over a Semester

CORE XI : EXECUTIVE BUSINESS COMMUNICATION

After the completion of course the students should

CO 1 : Develop oral and written business communication skills

CO 2 : Be aware of the various modes and forms of communication in business

CO 3 : Be able to prepare a resume and apply for jobs and attend interviews

CO 4 : Understand and know the modern trend of communication applicable to business

CO 5 : Be able to communicate clearly in day to day business

Credits: 3 Theory Period of 3 Hour per week over a Semester

CORE XII : BANKING THEORY

After the completion of course the students should

CO 1 : To develop the knowledge in the field of banking.

CO 2 : Able to know the E-Banking service.

CO 3 : To know the function central banks.

CO 4 :To have thorough knowledge as function of development banking.

CO 5 :Able to know the function of banks.

Credits: 3 Theory Period of 3 Hour per week over a Semester

ALLIED IV : STATISTICS FOR BUSINESS

After the completion of course the students should

CO 1 : To enable the students to learn the statistical method and their application in commerce

CO 2 :To clear study the measure of central tendency and dispersion

CO 3 :To learn the correlation and regression analysis.

CO 4 :To study thr simple problems based on addition and multiplication theorems.

CO 5 :To enrich to solve the statistical problems in commerce.

Credits: 6 Theory Period of 4 Hour per week over a Semester

SKILL BASED SUBJECT II : COMPUTER APPLICATION PRACTICAL – I

After the completion of course the students should

CO 1 :Understand the practical applications of computer in business

CO 2: Be able to work with MS office.

CO 3:Perform efficiently using MS excel

CO 4: Gain complete knowledge on the utilization of computer in day to day activities of a business

Credits: 3 Practical Period of 3 Hour per week over a Semester

SEMESTER V

CORE XIII : CORPORATE ACCOUNTING – II

After the completion of course the students should

CO 1 : Aim to enlighten the students on accounting procedure followed by the companies.

CO 2 : To enable the students to be aware on the advanced corporate accounting in conformity with the provision of the companies act

CO 3 : It makes to learn the banking and insurance company accounts.

CO 4 : To develop the knowledge in the field of public company accounts

CO 5 : Should have a thorough knowledge on the advance accounting practice prevailing in the corporate

Credits: 4 Theory Period of 6 Hour per week over a Semester

CORE XIV : BANKING THEORY LAW AND PRACTICE

After the completion of course the students should

CO 1 :Aims to enlighten the students on the recent trends in banking and the regulating provisions

CO 2 :To enlighten the students knowledge on banking relation act

CO 3 :To develop the knowledge about the banking instruments

CO 4 :To know thorough knowledge regarding commercial banks lending policies and practices

CO 5 :Should have thorough knowledge on Indian banking system and acts pertaining to it.

Credits: 4 Theory Period of 5 Hour per week over a Semester

CORE XV : COST ACCOUNTING

After the completion of course the students should

CO 1 : Aim to enlighten the students on the various methods of costing adopted in practice

CO 2 : To keep the students conversant with ever enlarging frontiers of cost accounting knowledge.

CO 3 : To understand the various bonus and incentive scheme followed in the concern

CO 4 : Able to learn how to calculate the cost of production of a particular product

CO 5 : Should have a thorough knowledge on the cost accounting and method of accounting cost.

Credits: 4 Theory Period of 5 Hour per week over a Semester

CORE XVI : INCOME TAX LAW & PRACTICE

After the completion of course the students should

CO 1: Know about the Income Tax Act and its scope.

CO 2: Understand the concepts of salaries and computation of taxable salary.

CO 3: Know to compute taxable income from house property.

CO 4 : Gain knowledge about income from business and compute taxable capital gain.

CO 5: Have an understanding on Income Tax Authorities and the procedure of assessment.

Credits: 4 Theory Period of 6 Hour per week over a Semester

ELECTIVE I : BUSINESS FINANCE

After the completion of course the students should

CO 1 : Aims to throw light on the importance of finance to business and the proper ways of managing it.

CO 2 : To enable the student to know the intricacies of business finance.

CO 3 : To understand on sources and forms of finance

CO 4 : Should be well versed in the concept of business finance and the application of finance to business.

Credits: 4 Theory Period of 5 Hour per week over a Semester

SKILL BASED SUBJECT III : BUSINESS APPLICATION SOFTWARE – II

After the completion of course the students should

CO 1: This course aim to expose the students on application of computer in business

CO2: To enable the students to learn the course of MS office

CO 3: Enable the student to prepare power point presentation

CO 4: Enable to learn the MS Access and how to prepare queries

CO 5: On sure completion of this course, the student should have understand the sem 6 basic frame work and how to work in MS Power point and MS Access

Credits: 3 Theory Period of 2 Hour per week over a Semester

Practical Period of 1 Hour per week over a Semester

SEMESTER VI

CORE XVII : MANAGEMENT ACCOUNTING

After the completion of course the students should

CO 1 : Have thorough knowledge about management accounting and its basic concepts.

CO 2 : Know about ratio analysis and working capital management

CO 3 : Have an understanding on fund flow and cash flow in business.

CO 4 : Analyze marginal costing and break even of a company

CO 5 : Gain knowledge on budgeting and its types.

Credits: 4 Theory Period of 6 Hour per week over a Semester

CORE XVIII : PRINCIPLES OF AUDITING

After the completion of course the students should

CO 1 : This course aim to create interest in the mind the student towards auditing profession

CO 2 : To familiarize the student with the principles of auditing

CO 3 : It enable the student to know the position of auditors regarding valuation and verification of asset and liabilities.

CO 4 : To know the various modes of appointment of company auditors

CO 5 : On successful completion of this course the student should be well versed in the fundamental concept of auditing

Credits: 4 Theory Period of 5 Hour per week over a Semester

CORE XIX : INDIRECT TAX

After the completion of course the students should

CO 1: Aim to provide knowledge on the indirect taxes

CO 2: To develop about the knowledge excise duty

CO 3: To make the students to understand the procedure for VAT and filling of returns

CO 4: To enable the students to learn the fundamental of customs duty and central sales tax

CO 5: On successful completion of this course the student should be well versed in the prevailing act.

Credits: 4 Theory Period of 6 Hour per week over a Semester

ELECTIVE II : ENTREPRENEURIAL DEVELOPMENT

After the completion of course the students should

CO 1: Enable the student to know the fundamental of being a good entrepreneur

CO 2: To enable the student to learn the concept of entrepreneurialship

CO 3: To enable the student to learn about institutional finance and service to entrepreneur

CO 4: To know the concept of incentives and subsidies provided to the entrepreneurs by the government

CO 5: On successful completion of this course the student should be well versed in concept relating to entrepreneurs knowledge in the financial institution, project report, incentives and subsidies

Credits: 4 Theory Period of 5 Hour per week over a Semester

ELECTIVE III : FINANCIAL MARKETS

After the completion of course the students should

CO 1: Aim to create awareness about the role and importance of different agencies in corporate financing.

CO 2: To enable the students to know the functioning of Indian financial markets and institutions

CO 3: To develop the knowledge on banks as financial intermediaries

CO 4: Understand the sources and forms of finances

CO 5: Should know about the methods of financing by these agency and the key role placed by them in corporate financing.

Credits: 4 Theory Period of 5 Hour per week over a Semester

SKILL BASED SUBJECT IV : COMPUTER APPLICATIONS PRACTICAL – II MS

POWERPOINT, MS ACCESS AND TALLY 9.2 CREDITS:3 HOURS 3

After the completion of course the students should

CO1: Aim to expose the students on the practical application of computer in business

CO 2: Enable the students to work with MS office and Tally.

CO 3: On successful completion of this course the student should be able to work efficiently in MS Powerpoint, MS access and Tally.

Credits: 3 Practical Period of 3 Hour per week over a Semester

NAME OF THE PROGRAM : B.Com(CA)

Name of the Program: Bachelor of Commerce with Computer Applications

Program Specific Outcome (PSO):

PSO1 : Know and apply the various business management and computer applications concepts to solve the real-world problems.

PSO2 : Acquire the knowledge on object-based computer applications in various business fields.

PSO3 : Solve the business applications related issues of using oracle and object oriented programming languages

PSO4 : Analyze the real e-business problems by using the different applications of procedure-oriented language programs

PSO5 : Enrich the practical knowledge on applications of accounting and programming languages in business ventures.

Course Outcome(CO)

SEMESTER – I

Core I: Principles of Accountancy

CO 1 : Recall the fundamental concepts of accounting and book keeping.

CO 2 : Solve the errors in book keeping and identify the effect of BRS in an enterprise

CO 3 : Aware of Bills of exchange and its transaction including Accommodation bills

CO 4 : To gain knowledge about the preparation of final Accounts

CO 5 : Understand the Account current statement and procedure for calculation of Average due date methods

Credits: 4 Theory Period of 5 Hour per week over a Semester

Core II: Introduction to Information Technology

CO 1 : Understand the basic concepts about hardware and software components and data retrieval from various areas of business.

CO 2 : Recall and remember the different types of computers available in business industries.

CO 3 : Aware of different programming and machine level languages and steps to develop computer programmes.

CO 4 : To gain knowledge about e-commerce, internet and extranet understand the uses of world wide web applications.

CO 5 : Create the applications of computer information system in various business fields

Credits: 4 Theory Period of 4 Hour per week over a Semester

Core IV :Computer Applications: MS Office - Practical-I

CO 1 : Understand the basic concepts computer applications using MS-Office applications for the business transactions.

CO 2 : Create customers list using mail merge for sending letters to the respondents at a time.

CO 3 : Aware and apply various statistical tools available in Ms-excel for the business enterprise transactions.

CO 4 : To gain knowledge making effective presentation for the business meeting using power point presentation.

CO 5 : Understand and evaluate the database using MS-Word and excel.

Credits: Nil Practical Period of 4 Hour per week over a Semester

SEMESTER II

Core III :Advanced Accounting

CO 1 : Understand the different methods of depreciation.

CO 2 : Solve the problems of branch accounts, hire purchase and installment system.

CO 3 : Know the single entry system and statement of affairs method using conversion method

CO 4 : To gain knowledge on Partnership Accounts, Division of Profits, Fixed and Fluctuating Capital, Admission and Retirement of partners.

CO 5 : Understand Dissolution of Partnership and Insolvency of Partners.

Credits: 4 Theory Period of 7 Hour per week over a Semester

Core IV :Computer Applications: MS Office - Practical-I

CO 1 : Understand the basic concepts computer applications using MS-Access for maintaining the database.

CO 2 : Create different databases using access application for developing the business transactions

CO 3 : Apply the accounting principles and rules in tally software packages for updating the accounting transactions.

CO 4 : To gain knowledge on creating e-mail in tally package.

CO 5 : Gain the knowledge on visiting a business enterprise website and collect the data.

Credits: 4 Practical Period of 4 Hour per week over a Semester

SEMESTER III

Core V :Principles of Marketing

CO 1 : Understand the different types of marketing and career opportunities in marketing.

CO 2 : Know about the marketing function for achieving marketing goals.

CO 3 :Aware of consumer behaviour and market segmentation and customer relations marketing.

CO 4 :Analyze the marketing mix, product mix and know about the green marketing.

CO 5 :Gain the knowledge on different bureau of Indian standards and consumer protection rights.

Credits: 4 Theory Period of 5 Hour per week over a Semester

Core VI :Database Management System

CO 1 : Understand the basic concepts of data system, operational data and storage structures of the data

CO 2 : Understand the relation approach and its key relation algebra.

CO 3 : Aware about embedded SQL.

CO 4 : To gain knowledge on hierarchical approach for knowing the detailed description of the data.

CO 5 : Aware about embedded SQL.

Credits: 4 Theory Period of 5 Hour per week over a Semester

Core VII :Cost Accounting

CO 1 : Understand the different concepts and classification of costs and create cost sheet for the firms.

CO 2 : Gain the knowledge on different types of material controls.

CO 3 : Know the system of labour wage payment, labour turnover and classification of overhead.

CO 4 : Gain the knowledge on different types of process costing.

CO 5 : Understand Operating Costing, Contract costing, and Reconciliation of Cost and Financial accounts

Credits: 4 Theory Period of 6 Hour per week over a Semester

Allied Paper III: Managerial Economics

CO 1 : Familiarize the students with the basic concept of managerial economics

CO 2 : Make student understand the demand and supply analysis in business applications

CO 3 : Apply marginal analysis to the firm under different market conditions.

CO 4 : Analyze the causes and consequences of different market conditions.

CO 5 : Familiarize the students with the basic concept of managerial economics.

Credits: 4 Theory Period of 6 Hour per week over a Semester

Core VIII :Computer Applications: Oracle -Practical-II

CO 1 :Understand the basic concepts computer applications using Oracle for maintaining the database.

CO 2 :Create different databases using access application for developing the business transactions

CO 3 :Gain the knowledge on creating database using oracle.

CO 4 :Gain knowledge on application of oracle statements to extract the particular data base.

CO 5 :Gain the knowledge on developing employees and salary databases using oracle.

Credits: Nil Practical Period of 4 Hour per week over a Semester

Skill Based Subjects 1: Commercial law

CO 1 :Understand the fundamentals of laws relating to Commercial Activities.

CO 2 : Gain the knowledge on the basic Business Law

CO 3 :Gain the knowledge on Law of Contract Laws.

CO 4 :Gain the knowledge on Contract of Indemnity and Guarantee.

CO 5 :Gain the knowledge on the basic Business Law.

Credits: 3 Theory Period of 3 Hour per week over a Semester

SEMESTER IV

Core XI: Management Accounting

CO 1 :Recall the objectives and scope of management and know the relationship between other managerial accounting.

CO 2 :Analyze the performance of the company using different ratios

CO 3 :Understand the working capital requirements of the company using the format.

CO 4 :To gain knowledge about marginal costing and BEP analysis.

CO 5 :Understand about budgeting and budgetary control

Credits: 4 Theory Period of 6 Hour per week over a Semester

Core X: Object Oriented Programme with C++

CO 1 : Compare the different types of languages and find the importance of object-oriented programming language

CO 2 : Know and understand the C++ statements and motivate the students to make use of the statements.

CO 3 : Identify the class structure and develop the program

CO 4 : Develop the program by applying the concept of OOPs

CO 5 : Apply the data file operation technique and evaluate the program in a practical manner

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core XI: Executive Business Communication

CO 1 : Understand the effectiveness of business communication

CO 2 : To gain the knowledge on creating various forms of letters

CO 3 : Understand the concept on banking and insurance correspondence

CO 4 : To gain knowledge on report writing

CO 5 : To create a resume

Credits: 3 Theory Period of 3 Hour per week over a Semester.

Core XII: Computer Applications : Oracle & C++ Practical-II

CO 1 : Create programs by applying class and member functions concept

CO 2 : Develop the programs using member function definition

CO 3 : Apply the concepts of oracle to solve the problems of business enterprises.

CO 4 : Develop the students to use the reusability concepts.

CO 5 : Acquire the knowledge on the application of c++ and to solve the problems.

Credits: 4 Practical Period of 4 Hour per week over a Semester.

Core XIII: Banking Theory

CO 1 : Discuss the Basic concepts, functions and Classification of Banking System

CO 2 : Describe the Recent Trends in Banking.

CO 3 : Explain about the Organization structure of Banks and Credit control measures.

CO 4 : Enumerate the Indian Money Market.

CO 5 : Get an insight knowledge on State Bank of India and Commercial Banks.

Credits: 3 Theory Period of 3 Hour per week over a Semester.

Allied IV: principles of Management

CO 1 :Conceptualize the nature and scope of Management process

CO 2 :Understand the Planning and decision-making process.

CO 3 :Enlighten about the organization and organization structure.

CO 4 :Enumerate Theories of motivation and incentives.

CO 5 :Make the students to understand the Co-ordination and control process

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Skill Based Subject-2: Company Law

CO 1 : Discuss the characteristics of Company and its Formation

CO 2 : Understand the Planning and decision-making process.

CO 3 : Get a detailed knowledge on Prospectus and Kinds of shares and Debentures.

CO 4 : Acquire the knowledge on powers and duties of Director and Secretary.

CO 5 : Understand about kinds of meetings .

Credits: 3 Theory Period of 3 Hour per week over a Semester.

SEMESTER V

Core XIV: Principles of Auditing

CO 1 :Understand about the fundamental concepts Auditing.

CO 2 :Get a detailed knowledge on internal control in auditing

CO 3 :Acquire a detailed knowledge on verification of assets and liabilities.

CO 4 :Gain knowledge about Joint stock companies.

CO 5 :Understand about investigation.

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Core XV: Corporate Accounting

CO 1 : Understand about the issue of shares of the companies.

CO 2 : Get a detailed knowledge on redemption of preference shares.

CO 3 : Acquire a detailed knowledge on preparation of final accounts.

CO 4 : Apply the conceptual knowledge on valuation of goodwill and shares.

CO 5 : Understand about liquidation of companies.

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Core XVI: E-Commerce Technology

CO 1 : Understand the basic concept of E- Commerce and its applications

CO 2 :To gain the knowledge on EDI

CO 3 :Understand security and the web

CO 4 :To gain knowledge on consumer aspects in E-Commerce

CO 5 :To know and apply various digital payment methods

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Core XVII: Software Development With Visual Basic

CO 1 : Understand the concept on client and server

CO 2 : To gain the knowledge on IDE

CO 3 : Understand the concept on user defined data types

CO 4 : To gain knowledge on working with controls in VB

CO 5 : Understand on data controls

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Core XVIII: Computer Applications : Visual Basic - Practical-III

CO 1 : Understand the basic concepts computer applications using Oracle for maintaining the database.

CO 2 : Create different databases using access application for developing the business transactions

CO 3 : Gain the knowledge on creating database using oracle.

CO 4 : Gain knowledge on application of oracle statements to extract the particular data base.

CO 5 :Gain the knowledge on developing employees and salary databases using oracle. Credits: Nil
Practical Period of 4 Hour per week over a Semester.

Skill based Subject-3: Banking and Insurance Law

CO 1 : Understand the Concepts, functions of banking and relationship between Banker and Customer

CO 2 : Gain knowledge on Negotiable Instruments Act and its kinds

CO 3 : To gain knowledge on functions and principles of Insurance

CO 4 : Gain knowledge on Insurance System and Acts pertaining to it

CO 5 : Understand the IRDA functioning

Credits: 3 Theory Period of 3 Hour per week over a Semester.

Elective – I A: Income Tax Law & Practice

CO 1 : Recall the fundamental concepts of income tax

CO 2 : Analyze the income sources on salaries and house property

CO 3 : Aware on income from other sources

CO 4 : To gain knowledge about capital gains

CO 5 : Understand on assessment of individuals and tax liability

Credits: 4 Theory Period of 5 Hour per week over a Semester.

SEMESTER VI

Core XIX: Management Information System

CO 1 :Learn the features and models of MIS

CO 2 :Gain the knowledge on the system concepts.

CO 3 :To know the integration of Business Information through Computers.

CO 4 :Get a Knowledge on Database Management Systems

CO 5 :Students must be aware of utilization of business information for decision making.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Core XV: Internet and Web designing

CO 1 : Learn the functions and uses of internet.

CO 2 : Give the knowledge on how to search the web.

CO 3 : Learn to know the uses and applications of HTML.

CO 4 : Make the students to know how to create link the web.

CO 5 : Get a knowledge on how to download and upload the videos.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core XXI: Computer Applications: Visual Basic& Web Designing Practical-III

CO 1 : Create different databases using vb application for developing the business transactions

CO 2 : Gain the knowledge on creating programs using vb.

CO 3 : Gain knowledge on application of vb in business enterprises.

CO 4 : To gain knowledge on working with web page

CO 5 : To apply the frames in web page

Credits: 4 Practical Period of 4 Hour per week over a Semester.

Elective – II A: Business Finance

CO 1 : Introduce the concepts of business finance.

CO 2 : Understand about the financial plans.

CO 3 : Know about the capitalization of the financial sources.

CO 4 : Understand about the capital structure.

CO 5 : Know about the different sources of finance.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Skill based Subject- 4: Cyber Law

CO 1 : Discuss the concepts of Cyber law and Cyber Space

CO 2 : Describe Cyber Security technical aspects.

CO 3 : Explain the Evidence Aspects.

CO 4 : Understand the Electronic Data Interchange Scenario in India.

CO 5 : To gain knowledge on Information Technology Act.

Credits: 3 Theory Period of 3 Hour per week over a Semester.

NAME OF THE PROGRAM: BBA

Program Specific Outcome(PSO):

PSO1 : To get knowledge of business and management principles.

PSO2 : To create effective organizational leadership skills for making business decisions.

PSO3 : Apply the knowledge of business concepts and functions in an integrated manner.

PSO4 : Analyse the theoretical knowledge with the practical aspects of Organizational setting
and techniques or management

PSO5: To understand the micro and macro marketing environment

Course Outcome(CO)

SEMESTER – I

Core I : Principles of management

CO1 : To acquire knowledge in the field of management

CO2 : To know about the principles of management

CO 3: To gain insight into the evolutions of management & functions of management

CO4 : Planning & Decision Making in the organization

CO5 : Organization of management resources and selection process

CO6 : To acquire the skills needed for leadership and control

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core II : Basis of Business & Business Environment

CO1 : To gain knowledge about the types of Business organization

CO2 : To acquire knowledge about the different types of business organization

CO3 : To Know about the role of service sector in business

CO4 : To study the business environment & environmental analysis

CO5 : E-commerce and its benefits

CO6 : Types of economy

CO7 : To know about the role of GATT & WTO in the business

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Allied – I : Mathematics and Statistics for Management

CO1 : To Solve systems of linear equations by use of the matrix

CO2 : Be able to find the nature of a turning point

CO3 : Outline the meaning of marginal revenue and marginal cost and their relevance for firm's profitability.

CO4: To understand and compute the sampling distributions, sampling distribution of means and Variances and the t- test and F – distributions

CO5 : Summarize a regression analysis, and compute and interpret the coefficient of correlation.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

SEMESTER - II

Core III : Organizational Behavior

CO1 : To enable the students to acquire knowledge of organizational behavior & human psychology

CO2 : To know about Perception and motivation

CO 3 : To learn about the management experiments

CO4 : To analyze and compare different models used to explain individual behaviors related to motivation and rewards

CO5 : To explain group dynamics and demonstrate skills required for working in groups (team building)

CO6 : To identify the various leadership styles and the role of leaders in a decision making process.

CO7 : To discuss the implementation of organizational change.

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Core IV : Economics for Executives

CO1 : To know about the basics of business economics

CO2 : Understand and apply supply and demand analysis to relevant economic issues

CO3 : Apply marginal analysis to the “firm” under different market conditions

CO4 : To apply economic models in business

CO5 : To know about micro & macro economics

CO6 : To study market structure & pricing strategies

CO7 : To know about the involvement of government in business

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Allied – II : Quantitative Techniques for Management

CO1 : To gain knowledge about various concepts of operations research

CO2: To define and formulate linear programming problems and evaluate their applications

CO3: To apply the operations research tools that are needed to solve optimization problems

CO4: To apply the strategies of game theory and to make better decision while solving business problems

CO5: To study critical path analysis and programming evaluation and review techniques for timely project scheduling and completion

Credits: 4 Theory Period of 5 Hour per week over a Semester.

SEMESTER - III

Course Outcome : Core V: Financial Accounting

CO1 : To know about the basic accounting concepts

CO2 : Trial balance & Rectification of errors

CO3 : Profit & loss Account and Balance sheet

CO4 : Accounting for non-trading institutions

CO5 : Preparation of accounts for incomplete records.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core VI: Production and materials management

CO1 : To acquire knowledge of production process and materials management

CO2 : The enable students easily understand the production functions & process

CO3 : To know about Plant layout, production planning and control

CO4 : Materials handling equipment & maintenance management

CO5 : Fundamental principles of materials management & purchase procedure

CO6 : Inventory management techniques

CO7 : Roles and responsibilities of store keeper and its functions

CO8 : Quality control and inspection

CO9 : Element of TQM and procedure for obtaining ISO.

CO10 : This course will help the students to apply their knowledge in the area of production

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core VII : Marketing management

CO1 : To know about the basic concepts and principles of marketing management

CO2 : Importance and functions of marketing

CO3 : Environmental factors affecting the marketing function

CO4 : Market segmentation & Marketing strategy

CO5 : To know about the Product mix and product life cycle phase

CO6 : Factors influencing pricing decisions

CO7 : Management of physical distribution and marketing risks

CO8 : To learn about the branding decisions and brand equity.

CO9 : This course will help the graduates to apply knowledge & skills
in the field of marketing

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core VIII - PC Software (MS Office) - Practical

CO1 : To acquire knowledge in Pc Software (MS Office)

- CO2 : Introduction to MS Word and working with documents carrying out editing, formatting, creating, inserting tables and charts
- CO3 : Introduction to spreadsheets & its application, working with spreadsheets
- CO4 : Computing and formatting spreadsheets
- CO5 : Working with access and SQL statements creating forms for data entry
- CO6 : Introduction power point using different presentation templates

Credits: 3 Practical period of 3 hour per week over a semester

Allied - III : Business Law

- CO1 : To know about the basic legal aspects of business
- CO2 : To understand the Essentials in law of contract and agreements
- CO3 : To develop in the student an understanding of the free enterprise system and the legal safeguards of the same.
- CO4 : Legal rules in consideration and coercion
- CO5 : Agreement opposed to public policy
- CO6 : Discharge and breach of contract
- CO7 : Law relating to Contract of sale and transfer of property
- CO8 : Condition in Creation of agency and termination of agency
- CO9 : To develop in the student acceptable attitudes and viewpoints with respect to business ethics and social responsibility.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Skill based subject - 1 : Communication Skills I

- CO1 : To give the learners extensive practices to develop Listening, speaking, reading and writing skill
- CO2 : To develop soft skills among the learners enabling them to communicate effectively and efficiently
- CO3 : To help the students in developing their communication skills through effective use of English
- CO4 : To assist in developing their personality
- CO5 : Demonstrate appropriate and professional ethical behavior
- CO6 : To demonstrate critical and innovative thinking
- CO7 : Show an understanding of opportunities in the field of communication

Credits: 3 Practical period of 3 hour per week over a semester

SEMESTER - IV

Core : IX - Human Resource Management

CO1 : To acquire knowledge of Human Resource Management

CO2 : Role and functions of human resources

CO3 : Manpower planning and job description in the organization

CO4 : Performance appraisal and merit rating of employees

CO5 : Human relations and approaches to good human relations

CO6 : Computation of Wages and salary administration

CO7 : Labour welfare and social security

CO8 : Industrial relations and trade unionism

CO9 : Grievance handling systems and worker's participation in management

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core X - Financial Management

CO1 : To acquire knowledge in the sector of finance

CO2 : To understand the financial concepts, functions and sources of finance

CO3 : To gain more knowledge in the field of cost of capital and capital structure etc.,

CO4 : Factors influencing capital structure, Determination of Dividend policy

CO5 : Importance of working capital management and to study about cash management techniques

CO6: Preparation of various types of budgets

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core XI - Financial Accounting Package – Tally (Practical)

CO1 : To understand basic accounting concepts and principles with Tally

CO2: To create and generate accounting and inventory masters, vouchers and basic reports in Tally

CO3: To understand advanced accounting and inventory in Tally ERP 9

CO4 : To apply the basic concepts and practical application of VAT, CST, TDS and Service tax

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Core : XII - Management Information System

- CO1 : To acquire knowledge of Management Information system
- CO2 : Role of MIS in business and decision making
- CO3 : MIS support for different functions and Data base management systems
- CO4 : Computer hardware & software
- CO5 : Input & output devices and its uses in modern business
- CO6 : Telecommunication revolution
- CO7 : Introduction to E - Commerce
- CO8: EDI applications in business
- Credits:** 4 Theory Period of 5 Hour per week over a Semester.

Allied: IV - Taxation Law and practice

- CO1 : To acquire knowledge of principles of taxation law and practice
- CO2 : Income tax act 1961, Income exempted from income tax
- CO3 : Computation of income under salary and house property
- CO4 : Computation of income under profits and gains of business
- CO5 : Computation of capital gains & income from other sources
- CO6 : Income tax authorities' duties and their powers
- CO7 : Selected provision and registration of VAT
- CO8 : Central excise and customs duty
- Credits:** 4 Theory Period of 5 Hour per week over a Semester.

Skill based subject - 2: Communication Skills – II

- CO1 : To help the students in developing their communication skills effectively
- CO2 : To develop vocabulary building skills
- CO3 : To enhance the reading skills (Newspaper, books, and short stories books)
- CO4 : To develop writing skills such as preparation of letter, resume etc.,
- CO5 : Provide practice to students for filling different forms
- CO6 : Preparation of advertisement for recruitment and annual report
- CO7 : SWOT Analysis for the environmental issues in organization

Credits: 3 Practical period of 3 hour per week over a semester

SEMESTER – V

Core: XIII - Cost and Management Accounting

CO1 : To acquire knowledge of Accounting of managerial decisions

CO2 : The students can easily understand the concepts and elements of cost accounting

CO3 : Preparation of cost sheet, material issues and store control

CO4 : Labour cost remuneration and incentives

CO5 : Preparation of financial statement analysis

CO6 : Classification of ratio analysis

CO7 : Computation of fund flow and cash flow analysis

CO8 : Standard costing and variance analysis

CO9 : Preparation of marginal costing

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Core XIV - Research Methods for Management

CO1 : To acquire knowledge in the field of research

CO2 : Important and types of research

CO3 : Sampling process and its types

CO4 : Various methods of data collection in research

CO5 : Analysis and interpretation of data and application of tools & techniques

CO6 : Interpretation and report writing

CO7 : Application of research in various areas such as product, price, promotion & physical distribution

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core: XV- Advertising and sales promotion

CO1 : To gain knowledge of advertising techniques and sales promotion measures

CO2 : Importance and types of advertising

CO3 : Role of Advertising agencies, advertising budget

CO4 : Preparation of Advertising layout and advertising campaign

CO5 : Sales force management

CO6 : Sales promotion strategy and techniques

CO7 : Course will help the students to innovate new ideas and techniques in the field of advertising

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core XVI – Business Correspondence

CO1 : To understand the business correspondence and communication

CO2 : To learn and apply effective written communication techniques

CO3: To developing and delivering effective presentation

CO4: To determine and use proper psychological approach in writing situations

CO5: To acquire knowledge to demonstrate the importance of coherent, ethical communication principles in business and Industry

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course outcome Elective – I Modern Office Management Sub Code : (5EB)

CO1 : To acquire knowledge of Modern office management and its techniques used in business

CO2 : Basic concepts of office and its functions, office management relations with other department

CO3 : Office environment and communication used in business

CO4 : Office correspondence and record keeping & record management

CO5 : Office systems and procedures

CO6 : Office personnel management and relationship of employees

CO7 : Employee morale and productivity

Credits: 4 Theory period of 5 Hour per week over a semester

Skill based Subject – 3 : Campus to Corporate

CO1 : To train the learners for smooth transition from their campus to corporate for employment

CO2 : Basic Etiquette followed in workplace and business

CO3 : Attire and grooming skills for professionals

CO4 : Role of E- Communication and Modern communication with social network

CO5 : Aptitude Appetizer with quantitative Vs. verbal aptitude

CO6 : Preparation for competitive exams for employment and / or higher studies

Credits: 3 Practical period of 3 Hour per week over a semester

SEMESTER: VI

Core XVII – Entrepreneurship and Small Business Management

CO1: To develop idea generation, creative and innovative skills

CO2: To learn how to start an enterprise and design the business plans

CO3: The study helps to identify different opportunities and successful growth stories

CO4: To understand the nature and functions of entrepreneurs

CO5: To explore entrepreneurial leadership and management style

Credits: 4 Theory period of 6 Hour per week over a semester

Course outcome Core XVIII – Investment Management Sub Code: (63B)

CO1 : To acquire knowledge in the field of Investment management

CO2 : Concepts of investment and different sources of investment

CO3 : Investment in shares and debentures, role of new issue market

CO4 : Valuation of securities and bonds

CO5 : Security analysis such as economic, fundamental and technical analysis

CO6 : Efficient market theory

CO7 : This course will help the students to apply their knowledge in the area of investment decisions

Credits : 4 Theory period of 6 Hour per week over a semester

XIX – Services Marketing

CO1 : To get the knowledge about service marketing

CO2 : Service marketing system

CO3 : Service marketing mix strategies, Service product planning, service Pricing

CO4 : Role of communication and technology in service marketing

CO5 : Marketing of financial services

CO6 : Services in global perspective and recent trends in service marketing

Credits: 4 Theory period of 5 Hour per week over a semester

Elective – II Consumer Behavior

CO1 : To know the basic concepts of consumer behavior

- CO2 : Customer value and marketing ethics
- CO3 : Consumer research and consumer motivation
- CO4 : Consumer behavioral learning theories
- CO5 : Life style profile of consumer classes
- CO6 : Consumer decision making process

Credits: 4 Theory period of 5 Hour per week over a semester

Skilled based Subject – 4 : Soft Skills for Business

- CO1 : To help the students in developing their communication skills effectively
- CO2 : To give the learners exclusive knowledge to develop the presentation skills
- CO3 : To develop the negotiation skills
- CO4 : To enhance the team – working and team and assertiveness building skills
- CO5 : Resume preparation
- CO6 : Preparation for facing interviews and group discussion
- CO7 : Non- verbal communication such as body language and gesture
- CO8 : Career planning and career development

Credits: 3 Practical period of 3 Hour per week over a semester

NAME OF THE PROGRAM:BCA

Program Educational Objectives (PEOs)

The BCA program describe accomplishments that graduates are expected to attain within five to seven years after graduation

- PEO 1 To impart advance knowledge about various sub-domains related to the field of computer applications
- PEO 2 To provide the strong character to uphold the spiritual and cultural values of our country to make students acceptable to both industries and higher education.
- PEO 3 Graduates will be capable of attaining higher position in their professional carrier, capable to do quality research by strengthening their mathematical, scientific and basic engineering fundamentals.
- PEO 4 Graduate will be capable of adopting the changing technologies, tools, and industrial environment.
- PEO 5 Graduates will promote collaborative learning and spirit of team work through multidisciplinary projects and diverse professional activities.

Program Specific Outcomes (PSOs)

After the successful completion of BCA program, the students are expected to

- PSO 1 Develop proficiency in problem solving and logical thinking skill.
- PSO 2 To impart the knowledge of programming languages, web designing, networking and Software development cycle.
- PSO 3 Enrich the communicative ability to present orally throughout all the stages of Software development process
- PSO 4 Learn latest development and technologies in IT and Communications system.
- PSO 5 Implementation of professional engineering solutions for the betterment of society keeping the environmental context in mind, be aware of professional ethics and be able to communicate effectively.

Program Outcomes (POs)

On successful completion of the BCA program

- PO1 **Disciplinary knowledge:** Capable to apply the knowledge of mathematics, algorithmic principles and computing fundamentals in the modeling and design of computer based systems of varying complexity.
- PO2 **Scientific reasoning/ Problem analysis:** Ability to critically analyze, categorizes, formulate and solve the problems that emerges in the field of computer science.
- PO3 **Problem solving:** Able to provide software solutions for complex scientific and business related problems or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, societal and environmental considerations.
- PO4 **Environment and sustainability:** Understand the impact of software solutions in environmental and societal context and strive for sustainable development.
- PO5 **Modern tool usage:** Use contemporary techniques, skills and tools necessary for integrated solutions.
- PO6 **Ethics:** Function effectively with social, cultural and ethical responsibility as an individual or as a team member with positive attitude.
- PO7 **Cooperation / Team Work:** Function effectively as member or leader on multidisciplinary teams to accomplish a common objective.
- PO8 **Communication Skills:** An ability to communicate effectively with diverse types of audience and also able to prepare and present technical documents to different groups.
- PO9 **Self-directed and Life-long Learning:** Graduates will recognize the need for self-motivation to engage in lifelong learning to be in par with changing technology.

PO10 Enhance the research culture and uphold the scientific integrity and objectivity

Core 1:Computing Fundamentals and C Programming

- CO1 Learn about the Computer fundamentals and the Problem solving
- CO2 Understand the basic concepts of C programming
- CO3 Describe the reason why different decision making and loop constructs are available for iteration in C
- CO4 Demonstrate the concept of User defined functions , Recursions , Scope and Lifetime of Variables, Structures and Unions
- CO5 Develop C programs using pointers Arrays and file management

Credits: 4 Theory Period of 1 Hour per week over a Semester

Core 2:Digital Fundamentals and Computer Architecture

- CO 1 Learn the basic structure of number system methods like binary, octal and hexadecimal and understand the arithmetic and logical operations are performed by computers.
- CO 2 Define the functions to simplify the Boolean equations using logic gates.
- CO 3 Understand various data transfer techniques in digital computer and control unit operations.
- CO 4 Compare the functions of the memory organization
- CO 5 Analyze architectures and computational designs concepts related to architecture organization and addressing modes

Credits: 4 Theory Period of 1 Hour per week over a Semester

Core Lab 1: Programming Lab – C

- CO 1 Remember and Understand the logic for a given problem and to generate Prime numbers & Fibonacci Series (Program-1,2,3)
- CO 2 Apply the concepts to print the Magic square, Sorting the data , Strings, Recursive functions and Pointers (Program-4,5,6,8,10)
- CO 3 Remember the logic used in counting the vowels in a sentence (Program-7)
- CO 4 Apply and Analyze the concepts of Structures and File management
(Program-9,11,12)

Credits: 4 Theory Period of 1 Hour per week over a Semester

3 Practical Period of 1 Hour per week over a Semester

Core 3: C++ PROGRAMMING

- CO 1** Define the different programming paradigm such as procedure oriented and object oriented programming methodology and conceptualize elements of OO methodology
- CO 2** Illustrate and model real world objects and map it into programming objects for a legacy system.
- CO 3** Identify the concepts of inheritance and its types and develop applications using overloading features.
- CO 4** Discover the usage of pointers with classes
- CO 5** Explain the usage of Files, templates and understand the importance of exception Handling

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core Lab 2 : PROGRAMMING LAB - C++

- CO 1** Define the different programming paradigm such as procedure oriented and object oriented programming methodology and conceptualize elements of OO methodology
- CO 2** Illustrate and model real world objects and map it into programming objects for a legacy system.
- CO 3** Identify the concepts of inheritance and its types and develop applications using overloading features.
- CO 4** Discover the usage of pointers with classes
- CO 5** Explain the usage of Files, templates and understand the importance of exception Handling

Credits: 4 Theory Period of 1 Hour per week over a Semester

4 Practical Period of 1 Hour per week over a Semester

Core Lab 3 : Internet Basics

- CO 1 Understand the fundamentals of Internet and the Web concepts
- CO 2 Explain the usage of internet concepts and analyze its components.
- CO 3 Identify and apply the online information resources
- CO 4 Inspect and utilize the appropriate Google Apps for education effectively

Credits: 2 Theory Period of 1 Hour per week over a Semester

2 Practical Period of 1 Hour per week over a Semester

Core 4 : Data Structures

- CO 1 Understand the basic concepts of data structures and algorithms
- CO 2 Construct and analyze of stack and queue operations with illustrations
- CO 3 Enhance the knowledge of Linked List and dynamic storage management.
- CO 4 Demonstrate the concept of trees and its applications
- CO 5 Design and implement various sorting and searching algorithms for applications and understand the concept of file organizations

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core 5 : Java Programming

- CO 1 The competence and the development of small to medium sized application programs that demonstrate professionally acceptable coding
- CO 2 Demonstrate the concept of object oriented programming through Java
- CO 3 Apply the concept of Inheritance, Modularity, Concurrency, Exceptions handling and data persistence to develop java program
- CO 4 Develop java programs for applets and graphics programming
- CO 5 Understand the fundamental concepts of AWT controls, layouts and events

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core Lab 4 : Programming Lab – JAVA

- CO 1** Understand the basic concepts of Java Programming with emphasis on ethics and principles of professional coding
- CO 2** Demonstrate the creation of objects, classes and methods and the concepts of constructor, methods overloading, Arrays, branching and looping
- CO 3** Create data files and Design a page using AWT controls and Mouse Events in Java programming Implement the concepts of code reusability and debugging.
- CO 4** Develop applications using Strings, Interfaces and Packages and applets
- CO 5** Construct Java programs using Multithreaded Programming and Exception Handling

Credits: 4 Theory Period of 1 Hour per week over a Semester

5 Practical Period of 1 Hour per week over a Semester

Skill based Subject - 1 : Web Programming

- CO 1** Understand the basic concepts of Internet, WWW, browsers and Email and protocols.
- CO 2** Understand and apply the HTML, HTML elements and formatting styles
- CO 3** Knowledge on creating tables, forms and DHTML
- CO 4** Understand the structure of XML document, DTD and Schema
- CO 5** Knowledge on working with SML, Style sheets and XSL

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core 6 : System Software and Operating Systems

- CO 1** Know the program generation and program execution activities in detail
- CO 2** Understand the concepts of Macro Expansions and Gain the knowledge of Editing processes
- CO 3** Remember the basic concepts of operating system
- CO 4** Understand the concepts like interrupts, deadlock , memory management and file management
- CO 5** Analyze the need for scheduling algorithms and implement different algorithms used for representation, scheduling, and allocation in DOS and UNIX operating system.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core 7 : Linux and Shell Programming

- CO 1 Describe the architecture and features of Linux Operating System and distinguish it from other Operating System.
- CO 2 Develop Linux utilities to perform File processing, Directory handling, User Management and display system configuration
- CO 3 Develop shell scripts using pipes, redirection, filters and Pipes
- CO 4 Apply and change the ownership and file permissions using advance Unix commands.
- CO 5 Build Regular expression to perform pattern matching using utilities and implement shell scripts for real time applications.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core Lab 5 : Programming Lab –Linux and Shell Programming

- CO 1 Develop Linux utilities to perform File processing, Directory handling and User Management
- CO 2 Understand and develop shell scripts using pipes, redirection, filters, Pipes and display system configuration
- CO 3 Develop simple shell scripts applicable to file access permission network Administration
- CO 4 Apply and change the ownership and file permissions using advance Unix commands.
- CO 5 Create shell scripts for real time applications.

Credits: 4 Theory Period of 1 Hour per week over a Semester

6 Practical Period of 1 Hour per week over a Semester

Skill Based Subject 2 (Lab) :1 - Web Programming

- CO 1 Understand the problems and create applications in basics of web programming
- CO 2 Understand and develop Web pages with formatting styles.
- CO 3 Apply the features in HTML to present the details given
- CO 4 Analyze the problem, apply the concept for developing applications
- CO 5 Create web sites of real time applications

Credits: 3 Theory Period of 1 Hour per week over a Semester

4 Practical Period of 1 Hour per week over a Semester

Core 8 : RDBMS & Oracle

- CO 1 Understand the basic concepts of Relational Data Model, Entity- Relationship Model and process of Normalization
- CO 2 Understand and construct database using Structured Query Language (SQL) in Oracle9i environment.
- CO 3 Learn basics of PL/SQL and develop programs using Cursors, Exceptions, Procedures and Functions.
- CO 4 Understand and use built-in functions and enhance the knowledge of handling multiple tables
- CO 5 Attain a good practical skill of managing and retrieving of data using Data Manipulation Language (DML)

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core 9 : Visual Basic

- CO 1 Demonstrate fundamental skills in utilizing the tools of a visual environment such as command, menus and toolbars.
- CO 2 Implement SDI and MDI applications using forms, dialogs and other types of GUI components.
- CO 3 Understand the connectivity between VB with MS-ACCESS database.
- CO 4 Implement the methods and techniques to develop projects.
- CO 5 Attain a good practical skill of managing ODBC and Data Access Objects.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core Lab 6 : Programming Lab – VB & Oracle

- CO 1 Understand the concepts of Visual Basic.
- CO 2 Learn the advantages of Controls in VB
- CO 3 Design and develop the event- driven applications using Visual Basic framework.
- CO 4 Apply the knowledge of database methods.
- CO 5 Learn basics of PL/SQL and develop programs using Cursors, Exceptions, Procedures and Functions

Credits: 4 Theory Period of 1 Hour per week over a Semester

6 Practical Period of 1 Hour per week over a Semester

Elective I : PHP & Scripting Languages

- CO 1 Understand the basics of .VB script and Java scrip.
- CO 2 Understand the I/O handling, data validation, Activex control and validation.
- CO 3 Understand and remember the java script objects, form validations, cookies and plugins.
- CO 4 Understand the sever side scripting language basics.
- CO 5 Knowledge on PHP objects, cookies, connecting remote files, and database connections.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Skill based Subject – 3 : CASE Tools Concepts and Applications

- CO 1 Understand the basic concepts of software engineering
- CO 2 Apply the software engineering models in developing software applications
- CO 3 Implement the object oriented design in various projects
- CO 4 Knowledge on how to do a software project with in-depth analysis.
- CO5 To inculcate knowledge on Software engineering concepts in turn gives a roadmap to design a new software project.

Credits: 6 Theory Period of 1 Hour per week over a Semester

Core 10 : Graphics & Multimedia

- CO 1 Explain applications, principles, commonly used and techniques of computer graphics and algorithms for Line-Drawing, Circle- Generating and Ellipse-Generating.
- CO 2 Students will get the concepts of 2D and 3D, Viewing, Curves and surfaces, Hidden, Line/surface elimination techniques
- CO 3 Studies concepts of Multimedia Systems, Text, Audio and Video tools
- CO 4 Compressing audio and video using MPEG-1 and MPEG-2
- CO 5 Creates Animation with special effects using algorithms

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core 11: Project Work Lab

- CO 1 Formulate a real world problem and develop its requirements develop a design solution for a set of requirements.
- CO 2 Test and validate the conformance of the developed prototype against the original requirements of the problem.

- CO 3** Work as a responsible member and possibly a leader of a team in developing software solutions.
- CO 4** Express technical ideas, strategies and methodologies in written form. Self-learn new tools, algorithms and techniques that contribute to the software solution of the project.
- CO 5** Generate alternative solutions, compare them and select the optimum one.

Credits: 5 Theory Period of 1 Hour per week over a Semester

Core Lab 7 : Programming Lab – Graphics & Multimedia

- CO 1** Understand the basic concepts of computer graphics.
- CO 2** Design scan conversion problems using C and C++ programming.
- CO 3** Apply clipping and filling techniques for modifying an object.
- CO 4** Understand the concepts of different type of geometric transformation of objects in 2D.
- CO 5** Understand and develop the practical implementation of modeling, rendering, viewing of objects in 2D

Credits: 4 Theory Period of 1 Hour per week over a Semester

6 Practical Period of 1 Hour per week over a Semester

Elective II : Computer Networks

- CO 1** Remember the organization of computer networks, factors influencing computer network development and the reasons for having variety of different types of networks.
- CO 2** Understand Internet structure and can see how standard problems are solved and the use of cryptography and network security.
- CO 3** Apply knowledge of different techniques of error detection and correction to detect and solve error bit during data transmission.
- CO 4** Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies
- CO 5** Knowledge about different computer networks, reference models and the functions of each layer in the models

Credits: 4 Theory Period of 1 Hour per week over a Semester

Elective III : Software Testing

- CO1** Explain the basic concepts and the processes that lead to software testing
- CO2** Design test cases from the given requirements using Black box testing techniques
- CO3** Identify the test cases from Source code by means of white box testing techniques
- CO4** Know about user acceptance testing and generate test cases for it
- CO5** Examine the test adequacy criteria to complete the testing process

Credits: 4 Theory Period of 1 Hour per week over a Semester

Skill Based Subject 4 (Lab) :2 – CASE TOOLS LAB

- CO 1** Prepare the CASE tools for the given specification.
- CO 2** Understand and develop the UML diagram for real time applications.
- CO 3** Design the real time test cases
- CO 4** Analyze the development of CASE tools
- CO 5** Design the CASE tools and generate VB code

Credits: 3 Theory Period of 1 Hour per week over a Semester

4 Practical Period of 1 Hour per week over a Semester

NAME OF THE PROGRAM: B.Sc(CDF)

Name of the Program: Costume Design and Fashion

Program Specific Outcomes (PSOs)

After the successful completion of **B. Sc. Costume Design and Fashion** program, the students are expected to

- PSO1 Professionally trained in the areas of Apparel Designing and technology and to acquire knowledge of various garments.
- PSO2 Understand the basic concepts of Fashion Design, its Psychology and Traditional costumes
- PSO3 Demonstrate understanding of the principles of selected fibres, Yarns, Fabrication and their Finishing techniques and methods.
- PSO4 Equip with Apparel Management and Business, Merchandising, quality control and Entrepreneurial skills.
- PSO5 Understand the concepts of Environmental consciousness, communication skill, holistic and value based education, and lifelong learning ability.

PROGRAMME OUTCOMES

Program Outcomes (POs)

On successful completion of the **B.Sc. Costume Design and Fashion** program, the students are expected to

- PO1 Design, Draft and construct children, women and men' garments and develop Fashion portfolios.
- PO2 Apply the terminologies and concepts of Fashion design their respective field
- PO3 Develop products with quality for market by using appropriate merchandising and marketing strategies
- PO4 Plan and execute order in a garment manufacturing unit covering all stages - fiber, yarn, fabric and garment manufacture
- PO5 Analyse the structure of the fabric and appraise fibre, yarn and fabric with basic tests
- PO6 Enhance fabric designs with dyeing, printing and surface ornamentation techniques

Course Outcome(CO)

SEMESTER – I

Core I Basics of Garment Construction

- CO1 Describe the functions of a sewing machine and the tools needed for sewing
- CO2 Compare the methods of preparing pattern
- CO3 Appraise the types of sleeve
- CO4 Analyze the types of collars and yokes
- CO5 Appraise the techniques in pattern layout, alteration and grading

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core practical I Basics of Garment Construction Practical

- CO1 Develop samples for seams, seam finishes and hems
- CO2 Create samples for fullness and neckline finishes
- CO3 Create samples for fasteners and pockets
- CO4 Construct miniature samples for skirt and sleeves
- CO5 Construct miniature samples for collars and yoke

Credits: 4 Practical Period of 6 Hour per week over a Semester.

Allied practical I Fashion Sketching

- CO1 Illustrate garment designs for children
- CO2 Illustrate garment designs for woman
- CO3 Illustrate garment designs for man
- CO4 Sketch the parts of the body in various perspectives
- CO5 Sketch the face of male and female in different views

Credits: 3 Theory Period of 5 Hour per week over a Semester.

SEMESTER – II

Core II Fashion Designing

- CO1 Understand the design types, elements and principles of design
- CO2 Appraise the colour combinations with standard colour harmonies
- CO3 Interpret the fashion cycles, consumer groups and fashion theories

CO4 Develop dress design for unusual figure types

CO5 Define and describe the fashion terminologies and fashion profiles

Credits: 3 Theory Period of 4 Hour per week over a Semester.

Core practical II Garment Construction I

CO1 Design garments for child, woman and man

CO2 Develop patterns for child, woman and man using drafting method

CO3 Construct garments by sewing

CO4 Discover new techniques in pattern making and garment construction

CO5 Select the necessary tools needed for sewing

Credits: 4 practical Period of 5 Hour per week over a Semester.

Core practical III Fashion Designing Practical

CO1 Develop Prang colour chart, value and intensity chart

CO2 Illustrate human figures for a child, woman and man

CO3 Sketch garment designs following the various elements of design

CO4 Apply the principles of design and colour harmonies in the garments

CO5 Create garment designs for various seasons

Credits: 3 Practical Period of 3 Hour per week over a Semester.

Allied II Industrial Garment Production

CO1 Understand the stitching mechanism

CO2 Relate to the cutting and spreading methods in industries

CO3 Connect to the industrial marking and pressing methods

CO4 Analyse the type of sewing machines and its functions

CO5 Classify stitches and seams according to the federal standards

Credits: 3 Theory Period of 4 Hour per week over a Semester.

SEMESTER – III

Core III Costumes and Textiles Of India

CO1 Discover the beginning and origin of costumes

CO2 Recognize the dyed and printed textiles of India

CO3 Compare and contrast the various costumes of India

- CO4 Appraise the jewelleries of India
- CO5 Value the traditional embroideries of India

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core IV Fiber to Fabric

- CO1 Classify fibers and understand the properties of fibers
- CO2 Discover the manufacturing process of fiber
- CO3 Understand the yarn types and its manufacturing process
- CO4 Describe the weaving methods and its characteristic features
- CO5 Appraise the application and uses of non-woven fabrics

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core practical IV Garment Construction II

- CO1 Design garments for child, woman and man
- CO2 Develop patterns for child, woman and man using drafting method
- CO3 Construct garments by sewing
- CO4 Discover new techniques in pattern making and garment construction
- CO5 Select the necessary tools needed for sewing

Credits: 4 Practical Period of 5 Hour per week over a Semester.

Core practical V Fiber To Fabric Practical

- CO1 Distinguish the type of fiber by microscope, flame test and chemical tests
- CO2 Determine the count of the yarn and fabric
- CO3 Test the fabric for fabric weight and course length of the fabric
- CO4 Evaluate the color fastness and shrinkage of fabric
- CO5 Experiment the absorbency of fabric

Credits: 4 practical Period of 4 Hour per week over a Semester.

Allied III Textile Wet Processing

- CO1 Familiarize with the Process sequence in a textile industry
- CO2 Explain the types of finishes
- CO3 Discover the dyes and dyeing methods
- CO4 Understand the various printing methods
- CO5 Analyse the pollution created by the textile industry and the need for effluent

Treatment

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Skill Based Subject I Dyeing and Printing Practical

CO1 Modify the fabric properties with desizing, bleaching, scouring, and mercerizing

CO2 Define and use direct, reactive, vegetable and vat dye to the cotton fabric

CO3 Apply acid and basic dye to the silk fabric

CO4 Analyze print designs with direct printing method – block and stencil

CO5 Create print designs with resist printing – Tie and dye / batik

Credits: 3 practical Period of 4 Hour per week over a Semester.

SEMESTER – IV

Core V Fabric Structure and Design

CO1 To classify different types of weaves

CO2 To draw the design, draft and peg plan of weaves.

CO3 To differentiate between different type of weaves

CO4 To construct different types of weaves

CO5 Apply the methods of fabric representation

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core VI The Business Of Fashion

CO1 Describe the factors influencing fashion changes

CO2 Weigh the contributions of the fashion designers nationally and internationally

CO3 Understand the steps involved in new product development and sales promotion

CO4 Analyze the scope and functions of retailing and pricing

CO5 Evaluate the environmental pollution created by fashion products and move towards Sustainable fashion

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core practical VI Garment Construction III

CO1 Design garments for child, woman and man

CO2 Develop patterns for child, woman and man using drafting method

CO3 Construct garments by sewing

CO4 Discover new techniques in pattern making and garment construction

CO5 Select the necessary tools needed for sewing

Credits: 4 practical Period of 6 Hour per week over a Semester.

Core practical VII Fabric Structure And Design Practical

- CO1 Draw the design, draft and peg plan of weaves.
- CO2 Explain fabric structure
- CO3 Understand the weaving components
- CO4 Analyze the design aspects in the weaving pattern
- CO5 Evaluate the fabric according to weaving

Credits: 2 practical Period of 3 Hour per week over a Semester.

Allied IV Care and Maintenance of Textiles

- CO1 Identify suitable methods of washing, drying, ironing and storing
- CO2 Understand the wash care labels and act accordingly
- CO3 Appraise the types of equipment used in the care of fabrics
- CO4 Recognize the need for dry cleaning for fabrics
- CO5 Evaluate the methods and equipments to be used for a better life of clothes

Credits: 3 Theory Period of 4 Hour per week over a Semester.

Internship Training

- CO1 Understand the working structure of the industry/ company
- CO2 Analyse the methods adopted in the training place
- CO3 Correlate to the theoretical knowledge gained in the college
- CO4 Recognize the challenges in the training place
- CO5 Discover the nuances of the workplace and appreciate it

Credits: 2

Skill Based Subject II Surface Embellishments Practical

- CO1 Create hand embroidery samples
- CO3 Create machine embroidered samples
- CO3 Apply the techniques used in the Indian traditional embroideries
- CO4 Design and develop samples for drawn thread embroidery
- CO5 Create added structural effects using smocking

Credits: 3 practical Period of 5 Hour per week over a Semester.

SEMESTER – V

Core VII Knitting

- CO1 Understand the basics knitting process and the functions of a knitting machine
- CO2 Discover the weft knitting process and machineries used
- CO3 Discover the warp knitting process and machineries used
- CO4 Appraise the recent technology in the knitting industry
- CO5 Articulate the significant role played by the knitting industry locally and nationally

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core practical VIII Cad Practical I

- CO1 Understand and practice the tools and techniques of the CAD
- CO2 Apply the skills in area of garment designing
- CO3 Develop various colours and textures in computers
- CO4 Create garment designs for child, man and woman with CAD
- CO5 Create Jewellery designs using CAD

Credits: 4 Practical Period of 6 Hour per week over a Semester.

Core practical IX Knitting Practical

- CO1 Identify the loop structure of the fabric
- CO2 Find out the type of knitted fabric sample.
- CO3 Classify the different knit structures.
- CO4 Deduct knitting samples by unravel method and graphic representation
- CO5 Identify the defect and its remedy.

Credits: 2 Practical Period of 4 Hour per week over a Semester.

Project Fashion Design Portfolio

- CO1 Design garment collection based on an inspiration / theme
- CO2 Develop various boards like theme board, mood board, story board, colour board, fabric swatch board, patten board and flat pattern
- CO3 Select suitable fabrics and accessories for the garment collection
- CO4 Create a portfolio album
- CO5 Compile and present the portfolio effectively

Credits: 6 project Period of 5 Hour per week over a Semester.

Skill Based Subject III Garment Quality and Cost Control

- CO1 Define and establish quality standards
- CO2 Describe functions of quality control
- CO3 Analyze on garment cost and cost control
- CO4 Appraise on different quality management systems
- CO5 Evaluate the quality based on the parameters

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Elective Paper I

Organization of Garment Unit

- CO1 Interpret the meaning of entrepreneur and management
- CO2 Understand the organizational structure of a garment unit
- CO3 Plan factory design and layout to suit the production needs
- CO4 Prepare cost sheet for a finished product
- CO5 Set up a garment unit by performing SWOC analysis

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Accounting and Business Management

- CO1 Understand the basic concepts of accounting
- CO2 Create journal, ledger, trial balance and subsidiary books
- CO3 Prepare final accounts with profit and loss
- CO4 Identify overheads and work on costing accordingly
- CO5 Recognize the legal forms of ownership in business

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Entrepreneurial Development

- CO1 Understand the types and functions of entrepreneurship
- CO2 Identify, select a product and prepare a project proposal
- CO3 Distinguish the institutions that supports entrepreneurs
- CO4 Discover plans available in the supporting institutions
- CO5 Analyse the available incentives and subsidies

Credits: 4 Theory Period of 5 Hour per week over a Semester.

SEMESTER – VI

Core VIII Computers In The Garment Industry

- CO1 Articulate the specifications and functions of a computer and its peripherals
- CO2 Appraise the inevitable role played by computers in various sections of a textile / garment industry
- CO3 Understand the application of CAD and CAM in the areas of textile and garment designing
- CO4 Discover the use of computers in the field of body measurements, pattern making and grading
- CO5 Weigh the advantages of computer technology in the process sequences and thereby increase production

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Core practical X Cad Practical II

- CO1 Create garment designs with different colour harmonies in computers
- CO2 Develop garment designs with for the various elements of design in computers
- CO3 Design garment sketches with following the principles of design in computers
- CO4 Create garment designs for various seasons in computers
- CO5 Draft and grade patterns digitally

Credits: 4 Practical Period of 6 Hour per week over a Semester.

Core Practical XI Basic Draping Practical

- CO1 Discover and mark the important structural lines in a dummy form
- CO2 Analyse the fabric, straighten the fabric ends and remove the creases
- CO3 Create draped patterns for basic bodice blocks and skirt
- CO4 Create draped patterns for types of yokes
- CO5 Create draped patterns for types of collars

Credits: 4 Practical Period of 4 Hour per week over a Semester.

Skill Based Subject IV Innovation with Waste Fabrics

- CO1 Appraise the enormity of waste fabric available around
- CO2 Develop Interest with accessories making with bits of fabrics
- CO3 Modify bits of fabric into a creative product

CO4 Take part in 'thinking out of the box' concept

CO5 Design creative and unique products that can be used in their home

Credits: 3 Practical Period of 6 Hour per week over a Semester.

ELECTIVE PAPER II

Marketing and merchandising

CO1 Understand the basic concepts of marketing and fashion marketing

CO2 Describe the types of fashion products and the consumer behavior

CO3 Explain the process of communication, marketing research and forecasting

CO4 Discover the importance of merchandisers and their types

CO5 Interpret types of stores, design, layouts and merchandise presentation

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Principles of management

CO1 Discover the underlying concepts the principles of management

CO2 Appraise of planning and the steps involved in planning

CO3 Understand the importance of organising and the steps involved in planning

CO4 Articulate directing and the steps involved in planning

CO5 Recognise the importance of controlling and the steps involved in planning

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Business finance

CO1 Understand the scope and functions of Finance

CO2 Work on a financial Plan

CO3 Work on cost theory and earnings theory

CO4 Calculate the cost of individual and composite cost of capitals

CO5 Aware of the advantages and limitations of Equity shares, bonds, debentures and deposits

Credits: 4 Theory Period of 5 Hour per week over a Semester.

ELECTIVE PAPER III

Home textiles

CO1 Classify the home textile products

CO2 Understand the types of floor and wall coverings

CO3 Distinguish curtains and draperies

CO4 Describe the types of soft furnishings

CO5 Discover the types and functions of kitchen linen

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Export analysis and documentation

CO1 Apply the costing techniques

CO2 Infer the apparel promotion rules and functions

CO3 Explain the importance of export documentation

CO4 Classify the duties and responsibilities of import and export license

CO5 Compile the details on exchange of bills and documentation before shipping

Credits: 4 Theory Period of 4 Hour per week over a Semester.

Apparel quality management

CO1 Relate quality parameters for yarn and fabric

CO2 Identify the inspection methods for different stages.

CO3 Analyse the principles in TQM

CO4 Discover ISO standards for garment industry and implement it.

CO5 Classify the ISO documentation

Credits: 4 Theory Period of 4 Hour per week over a Semester.

PG PROGRAMS

NAME OF THE PROGRAM : M.Sc. Mathematics

Program Specific Outcomes (PSO)

PSO1: Communicate concepts of Mathematics and its applications.

- PSO2: Acquire analytical and logical thinking through various mathematical tools and techniques.
- PSO3: Investigate real life problems and learn to solve them through formulating mathematical models.
- PSO4: Attain in-depth knowledge to pursue higher studies and ability to conduct research. Work as mathematical professional.
- PSO5: Achieve targets of successfully clearing various examinations/interviews for placements in teaching, banks, industries and various other organizations/services.

Course Outcomes(CO):

SEMESTER – I

Core I: ABSTRACT ALGEBRA

- CO1. Understand Sylows theorem and its applications
- CO2. Formulate some special types of rings and their properties.
- CO3. Acquire knowledge on extension fields and roots of polynomials
- CO4. Analyze the elements of Galois theory and Galois Groups over the rationals
- CO5. Understand the basic concepts of solvability by radicals and finite fields.

Credits: 6 Theory period of 1 Hour per week over a Semester

Core II: REAL ANALYSIS

- CO1. Apply the Riemann Stieltjes integral and bring its properties and rectifiable curves.
- CO2. Remembering of sequences and series along with its properties
- CO3. Analyze the concept of linear transformation and find the extreme values of implicit functions.
- CO4. Understand the fundamental concept of Lebesgue measure.
- CO5. Evaluate the complex integration and the benefits of Lebesgue Integral

Credits: 7 Theory period of 1 hour per week over a semester

Core III: ORDINARY DIFFERENTIAL EQUATIONS

- CO1. Recall the types of linear homogeneous equations of second order equations with constant coefficients and apply the method to solve.
- CO2. Analyze non-homogeneous ODE using the method of undermined coefficients and annihilator method to solve the same.
- CO3. Understand and Apply the theorems on Initial value problem to ordinary differential equations.
- CO4. Comprehend the Euler equations, the Bessel's equation and Regular, Singular points at infinity and to evaluate.
- CO5. Identify the research problem where differential equation can be used to model the problem.

Credits: 7 Theory period of 1 hour per week over a semester

Core IV: NUMERICAL METHODS

- CO1. Solve problems in numerical differentiation and integration
- CO2. Solve system of equations using various methods.
- CO3. Apply various methods to find numerical solution of first and second order ordinary differential equations.
- CO4. Explain the various methods for solving Boundary Value Problems and Characteristic Value Problems
- CO5. Understand the Explicit method and the Crank Nicolson method for solving partial differential equations.

Credits: 6 Theory period of 1 hour per week over a semester

ELECTIVE I: CONTROL THEORY

- CO1. Explain observability and estimate the observability of constant coefficient system, linear, nonlinear system, and discuss reconstruction kernel.
- CO2. Apply controllability criteria to constant coefficient system, linear, nonlinear system, and explain steering function.
- CO3. Analyze the stability of linear system, linear time varying system, perturbed linear system and nonlinear system.
- CO4. Evaluate stabilizabilization via linear feedback control, Bass method.

CO5. Analyze controllable subspace, and stabilization with restricted feedback.

Credits: 4 theory period of 1 hour per week over a semester

SEMESTER – II

Core V: LINEAR ALGEBRA

CO1. Understand the basic concepts of Linear transformations, characteristic roots and matrices of linear transformation and its applications.

CO2. Explain about the algebra of polynomials, polynomial ideals and prime factorization of a polynomial.

CO3. Understand the basic concepts of determinants and its additional properties.

CO4. Recognize the concepts of Invariant subspaces and diagonalization process.

CO5. Analyze canonical Form, Jordan Form and Rational canonical Form

Credits: 6 Theory period of 1 hour per week over a semester

Core VI: COMPLEX ANALYSIS

CO1. Remembering the concept of Analytic function and as a mapping on the plane and understand Mobius Transformation.

CO2. Understand Cauchy's Integral Formula on open sets on the plane and know about poles, residues and singularities.

CO3. Apply the Cauchy's integral formula in residue theorems and in evaluation of definite integrals.

CO4. Analyze and represent the sum function of a power series as an Analytic Function.

CO5. Study and Understand periodic function, Weierstrass \wp function and its applications.

Credits: 7 Theory period of 1 hour per week over a semester

Core VII: PARTIAL DIFFERENTIAL EQUATIONS

CO1. Understand and remember the physical situations with real world problems to construct mathematical models using partial differential equations and study the methods to solve.

CO2. Analyze the type of partial differential equations and different methods to solve.

CO3. Evaluate Laplace equation and analyze its applications.

CO4. Apply variable separable method to solve Laplace and Diffusion equation

CO5. Finding the appropriate method to solve the partial differential equations

Credits: 7 Theory period of 1 hour per week over a semester.

Core VIII: MECHANICS

CO1. Understand the basic concepts of the mechanical system, generalized coordinates, work, energy and momentum.

CO2. Solve and analyze the Lagrange's equations and integrals of motion with examples.

CO3. Understand the Hamilton's Principle and other variational principles and gain ability to analyze those principles to the problems arising in practical situations

CO4. Understand and develop the Hamilton's Principal function and Hamilton Jacobi equation

CO5. Get familiar with canonical transformations, conditions of canonicity of a transformation in terms of Lagrange and Poisson brackets

Credits: 6 Theory period of 1 hour per week over a semester.

ELECTIVE II: FUZZY LOGIC AND FUZZY SETS

CO1. Gain knowledge about the basic types of fuzzy sets and the difference between crisp sets and fuzzy sets and the concept of operations on fuzzy sets

CO2. Analyze and apply the knowledge of fuzzy relations.

CO3. Develop the basic concepts of fuzzy measures.

CO4. Explore the concept of uncertainty.

CO5. Understand the types of uncertainty measures and principles

Credits: 4 Theory period of 1 hour per week over a semester

SEMESTER – III

Core IX: TOPOLOGY

CO1. Acquire knowledge about various types of topological spaces and their properties

CO2. Discuss connected spaces, the components of a space

CO3. Apply the properties and derive the proofs of theorems.

- CO4. Construct a variety of examples and counter examples in topology
- CO5. Understand the properties of the compact spaces and analyse the different types of Compactness

Credits: 7 Theory period of 1 hour per week over a semester.

Core X: FLUID DYNAMICS

- CO1. Recall the basic concepts of velocity, density and curvilinear co-ordinates.
- CO2. Understand the concepts and equations of fluid dynamics
- CO3. Analyze and understand the concepts of the force experienced by a twodimensional fixed body in a steady irrotational flow.
- CO4. Analyze the approximate solutions of the Navier – Stokes equation.
- CO5. Analyze and apply the appropriate method to solve integral equation of boundary layer, Blasius equation and its series solution.

Credits: 7 Theory period of 1 hour per week over a semester.

Core XI: MATHEMATICAL STATISTICS

- CO1. Remembering the understanding the basic concepts such as statistics, probability and random variables.
- CO2. Applying the concepts and methods to find the moments of the distributions.
- CO3. Study multivariate distributions and the independence of random variables. Further evaluating the marginal distributions from bivariate distributions.
- CO4. Analyze and study the properties of some discrete as well as continuous distributions
- CO5. Understand the convergence of distributions and central limit theorem.

Credits: 6 Theory period of 1 Hour per week over a Semester

Core XII: GRAPH THEORY

- CO1. Understand the basic concepts of Graphs and Trees
- CO2. Analyze vertex and edge connectivity concepts
- CO3. Acquire knowledge in Matching and Colourings
- CO4. Apply Chromatic Number

CO5. Determining the planar, non-planar, and directed graphs

Credits: 6 Theory period of 1 Hour per week over a Semester

ELECTIVE III: CRYPTOGRAPHY

CO1. Understand the basic concepts and objective of cryptography and recall the concept of modular arithmetic.

CO2. Understand mathematical foundations required for various cryptographic algorithms.

CO3. Apply the concept and properties of modular arithmetic in various algorithms to find the solution.

CO4. Describe and Analyze existing authentication protocols for two party communications.

CO5. Evaluate security mechanisms in the theory of networks and apply the appropriate Algorithms

Credits: 4 Theory period of 1 hour per week over a semester

SEMESTER – IV

Core XIII: FUNCTIONAL ANALYSIS

CO1. Familiarize with the concepts of normed linear spaces and operators on normed linear space

CO2. Demonstrate an understanding of the concepts of Hilbert spaces and Banach spaces, and their role in mathematics

CO3. Apply the theorems.

CO4. Obtain Orthogonal complements, Orthonormal sets and conjugate space.

CO5. Understand the concepts of linear operators, self adjoint, unitary operators, isometric on Hilbert spaces ,Determinants ,the spectrum of an operator, Banach algebra.

Credits: 7 Theory period of 1 Hour per week over a Semester

Core XIV: MATHEMATICAL METHODS

CO1. Understand and Apply various transforms and Integral equations to solve problems in all respects.

CO2. Recognize and solve the special cases of Volterra Integral equations by the method of resolvent kernel, method of successive approximations and by using transforms.

CO3. Understand the relations between the Hankel, Fourier transform and their applications in evaluating the equations.

CO4. Understand the formulation of variational problems, the variation of functional and its properties.

CO5. Demonstrate and apply the methods in all application problems in day-today life.

Credits: 7 Theory period of 1 Hour per week over a Semester

Core XV: OPTIMIZATION TECHNIQUES

CO1. Explain various techniques to solve real life problems expressed in terms of LPP.

CO2. Solving LPP through Dynamic Programming

CO3. Apply the fundamental concept of Inventory control.

CO4. Understanding the queuing theory

CO5. Solving NLPP using Kuhn–Tucker Method

Credits: 6 Theory period of 1 hour per week over a semester.

Core XVI : COMPUTER PROGRAMMING (C++ THEORY)

CO1. Understand and apply the C++ structure, tokens, expressions, control structures

CO2. Ability to declare various prototyping, friend and virtual functions

CO3. Create Classes, objects, arrays of objects, constructors, and Destructors

CO4. Analyze over loading operators and inheritance

CO5. Deliberate files, pointers and templates. Create, design and develop quality programs in C++

Credits: 4 Theory period of 1 Hour per week over a Semester

PRACTICAL: COMPUTER PROGRAMMING (C++ PRATICAL)

CO1. Learn to run a program using friend function in distance conversion problem.

CO2. Understand to run a program using float in overloading objects.

CO3. Learn to run a program using + operator in overloading conversions.

- CO4. Understand how to run a program using MAT type objects in overloading matrix.
- CO5. Understand how to run a program of area computation using derived class.
- CO6. Learn to run a program by applying overloading concepts for vector problem.
- CO7. Understood how to run a program using constructor function in inheritance.

Credits: 2 Practical period of 2 hour per week over a Semester

ELECTIVE IV: DIFFERENTIAL GEOMETRY

- CO1. Define and understand basic definitions of the theory of curves.
- CO2. Interpret the notions of surface of revolution and direction coefficients.
- CO3. Analyze the elements of Analytic representation.
- CO4. Acquire knowledge on first fundamental form and second fundamental form.
- CO5. Explain Meusnier's theorem and Euler's Theorem on elementary theory of surface.

Credits: 4 Theory period of 1 Hour per week over a Semester

NAME OF THE PROGRAM :M.Sc (Computer Science)

Program Specific Outcome(PSO):

- PSO1 : Methods and tools to design, implement, test, document, and maintain a computer-based system.
- PSO2 : Apply algorithms, techniques, and problem solving approaches in various domains.
- PSO3 : Can place latest knowledge into context in the relevant field.
- PSO4 : Methods and tools for analyzing complex real-world problems and devise computer-based solutions.
- PSO5: Be receptive to new ideas and innovation.

Course Outcome(CO)

Paper I :Analysis & Design of Algorithms

- CO1 : To analyze a problem and identify the computing requirements appropriate for its Solution.

CO2 : Analysis of Algorithms: computational models, order notation, time and space complexities, worst-case and expected complexities, lower and upper bounds, Amortized cost.

CO3 : Techniques for designing efficient algorithms: recursion, divide-and-conquer, dynamic programming, balancing and backtracking.

CO4 : Problems on sets and sequences: merging, sorting, searching, and selection.

CO5 : Apply backtracking, branch and bound techniques for real time problems.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Paper II :Object Oriented Analysis and Design & C++& Lab

CO1 : Learns the object model, classes, objects and their relationship, nature of the classes and introduction to C++.

CO2 : Understand and Apply Object oriented features and C++concepts.

CO3 : Define and explain with examples OOP concepts such as Inheritance, function overloading, operator overloading, virtual functions, inline functions, classes, objects, default arguments, static members.

CO4 : Implement exception handling and templates.

CO5 : Develop applications using Console I/O and FileI/O.

CO6 : Apply object-oriented programming principles in solving real-world problems.

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Paper III Python Programming & Lab

CO1 : Understand the basic concepts of Python Programming.

CO2 : Understand File operations, Classes and Objects.

CO3 : Acquire Object Oriented Skills in Python.

CO4: Develop web applications using Python.

CO5 : Develop Client Server Networking applications.

Credits: Theory Period of 6 Hour per week over a Semester.

Paper IV Advanced Software Engineering

CO1 : Understand basic concepts of software engineering.

CO2 : Shows the Software Requirements Analysis and Specifications.

CO3 : Knows about Quality of Software with ISO 9000, SEICMM.

CO4 : Compare different software project estimation models with COCOMO.

CO5 : Analyse the principles of requirement Engineering.

CO6 : Create design for a given project with Cohesion and coupling.

CO7 : Apply different testing techniques.

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Paper V Data Mining and Warehousing

CO1 : Enable the students to learn the Data mining tasks, classification, clustering and Data ware housing techniques.

CO2 : Learn, Apply and Compare Classification Techniques and Clustering Techniques.

CO3 : Learn association analysis and algorithms, Generate and Evaluate Association patterns

CO4 : To understand basic data warehouse structure and to learn how to gather and analyze large sets of data to gain useful business understanding.

CO5 : Examine the types of data to be mined and present a general classification of tasks and primitives to integrate a data mining system.

CO6 : Select and apply proper data mining algorithms to build analytical applications.

CO7 : Understand the Implementation of OLAP, Data Mining and its challenges,Types of Data Processing and Measures of Data.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Paper VI: Advanced Operating Systems

CO1 : Enable the students to learn the basics of operating systems, distributed operating systems.

CO2: Learns various process management concepts including scheduling, deadlocks and distributed file systems.

CO3: Prepare Real Time Task Scheduling.

CO4: Analyze Operating Systems for Handheld Systems.

CO5: Analyze Operating Systems like LINUX and IOS.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Paper VII :Advanced Java Programming

Practical IV : Advanced Java Programming Lab

CO1: Understand the basics of Java ,Networking and Media Techniques.

CO2: Implementing Remote Method Invocation.

CO3: Explain the Databases in Java ,principles and creating multimedia databases.

CO4: Handle different event in java using the delegation event model, event listener and class.

CO5: Design interactive applications using Java Servlet, JSP and JDBC.

CO6: Creating JAR File format and learn advanced java techniques.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Paper VIII :Artificial Intelligence & Machine Learning

CO1 : Students will get the concepts of Artificial intelligence, Intelligent Agents And issues in the design of search programs.

CO2: Students will get the concepts of Search techniques Adversarial search And Heuristic search strategies.

CO3: Students will get the concepts of Knowledge & reasoning of predicate logic and representing knowledge using rules, probabilistic reasoning,

CO4: Students will get the concepts Learning and Expert Systems planning.

CO5: Analyze the impact of machine learning on applications.

CO6: Implement and understand the dynamic behavior of a system.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Elective I.1: Internet of Things

CO1 : Learn the concepts of Understand about IoT, its Architecture and its Applications

CO2 : Understand basic electronics used in IoT& its role

CO3: Develop applications with C using Arduino IDE

CO4 : Analyze about sensors and actuators

CO5 : Design IoT in real time applications using today's internet & wireless technologies

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Practical III : Data Mining using R

CO1: Implement Apriori algorithm to extract association rule of data mining.

CO2: Implement k-means clustering technique.

CO3: Implement any one Hierarchal Clustering.

CO4: Implement Classification algorithm.

CO5: Implement Decision Tree.

CO6: Linear Regression.

CO7: Data Visualization.

Credits: 3 Practical period of 3 hour per week over a semester

Paper IX Digital Image Processing & Practical V :Lab

CO1: Explain fundamental steps of Digital Image Processing

CO2: To know the elements of visual perception, sampling and quantization.

CO3: Apply frequency domain filters and spatial filters for image enhancement and know the effects

CO4: Identify the image degradation models which includes linear, position-invariant models

CO5: Analyze various filtering techniques used to restore the image

CO6: To clear the Effects of Diagonalization on the Degradation Model.

CO7: To illuminate image compression models and segmentation techniques.

CO8: To understand fundamental coding theorems.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Paper X Cloud Computing & Practical VI : Lab

CO1: Understand the concepts of Cloud and its services

CO2: Collaborate Cloud for Event & Project Management

CO3: Analyze on cloud in – Word Processing, Spread Sheets, Mail, Calendar, Database

CO4: Analyze cloud in social networks

CO5: Explore cloud storage and sharing

Credits: 3 Practical period of 3 hour per week over a semester

Paper XI Network Security and Cryptography

CO1: Analyze the basic concepts of cryptography and network security and classify attacks on a network.

CO2: Analyze the different process for hiding the information with conventional cryptographic algorithms.

CO3: Understand the working of various block cipher cryptosystems.

CO4: Analyze public cryptosystems and disseminate from conventional systems for the security.

CO5: Apply authentication techniques like Kerberos, X.509 to provide secure communication.

CO6: To be well known with network security threats and countermeasures and to design available secure solutions (such as PGP, SSL, IPSec,etc.,).

CO7:Knowledge with Web Security and SET

CO8:Provide Password Security in Firewalls and Intrusion Detection mechanism

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Paper XII Data Science & Analytics:

CO1: Understand the concept of data science, process and steps.

CO2: Review data analytics.

CO3: Learn Advanced data Analytics Technology and tools.

CO4: Apply and determine appropriate Data Mining techniques using R to real time applications.

CO5: Analyze on clustering algorithms.

CO6: Analyze on regression methods in AI , machine learning and deep learning.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

ELECTIVE 2.3 – Web Services

CO1: Enable the student to be familiar with distributed services, XML and web services.

CO2: Knows the basics of web services and its platforms.

CO3: Learns XML Fundamentals and to process XML documents.

CO4: Learns SOAP, WSDL structure and UDDI

CO5: Knows the Advanced web services technologies and standards and also about Web services security issues.

CO6: Studies the Importance of QoS for web services and QoSmetrics

Credits: 3 Theory Period of 5 Hour per week over a Semester.

ELECTIVE 2 –Block Chain Technology

CO1: Demonstrate block chain technology and crypto currency

CO2: Understand the mining mechanism in block chain

CO3: Apply and identify security measures, and various types of services that allow people to trade and transact with bitcoins

CO4: Apply and analyze Block chain in health care industry

CO5: Analyze security, privacy, and efficiency of a given Block chain system

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Practical VII : Web Application Development & Hosting Lab

CO1: Understand & implement the basic HTML tags to create static web pages

CO2: Capable of using hyperlinks, frames, images, tables,in a web page

CO3: Able to write dynamic web applications using HTML forms

CO4: Must be able to write dynamic web applications in PHP & HTML tags using XAMPP.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Project work and Viva voce:

CO1: To give a practical exposure to the process of software development lifecycle.

CO2: To develop a quality software solution by following the software engineering principles and practices.

CO3: Students are also encouraged to take up a research oriented work to formulate a research problem and produce results based on its implementation / simulation /experimental analysis.

CO4: Methods and tools to design, implement, test, document, and maintain a computer-based system.

CO5: Apply research methods, techniques, and problem solving approaches from the field of research in which they are specializing

CO6: Access, retrieve and evaluate relevant professional information reliably

CO7: Methods and tools for analyzing complex real-world problems and devise computer based solutions

CO8: Be receptive to new ideas and innovation

CO9: Analyze complex real-world problems and devise efficient computer-based solutions

Credits: 3 Practical period of 3 hour per week over a semester

NAME OF THE PROGRAM: M.COM

SEMESTER I

MANAGERIAL ECONOMICS

After the successful completion of the course the students should

CO 1: Understand the scope of managerial economics and its relation with other disciplines.

CO 2 : Be able to analyse the demand determinants and elasticity of demand.

CO 3 : Gain knowledge on cost concepts and break even analysis.

CO 4 : Be able to understand different market competitions and pricing policies.

CO 5 : Gain thorough knowledge on fiscal policy and public finance.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

CORPORATE ACCOUNTING

After the successful completion of the course the students should

CO 1: Have thorough knowledge on final accounts and profit prior to incorporation.

CO 2 : Be able to analyse the concepts of amalgamation, absorption, external reconstruction and internal reconstruction.

CO 3: Understand holding company accounts and liquidation of companies.

CO 4 : Gain knowledge on banking company accounts and insurance company accounts.

CO 5: Be able to understand inflation accounting, human resource accounting and responsibility accounting.

Credits: 4 Theory Period of 7 Hour per week over a Semester

INFORMATION TECHNOLOGY IN BUSINESS

After the successful completion of the course the students should

CO 1: Gain knowledge on hardware and software and its recent developments.

CO 2: Be able to understand the types of computer systems and generation of computers.

CO 3: Understand data processing systems and networking concepts.

CO 4: Have thorough knowledge on components of computer system and application software programming languages.

CO 5: Have clear view on e-commerce and world wide web sites.

Credits: 4 Theory Period of 6 Hour per week over a Semester

MARKETING MANAGEMENT

After the successful completion of the course the students should

CO 1: Have thorough knowledge on marketing management and marketing organisation structure.

CO 2 : Understand the concepts of product development and pricing.

CO 3 : Be able to understand the channels of distribution and factors influencing selection of a channel.

CO 4 : Gain knowledge on sales promotion and qualities of salesman.

CO 5 : Have an opportunity to know the concepts of advertising and media of advertising.

Credits: 4 Theory Period of 6 Hour per week over a Semester

ELECTIVE I : FINANCIAL MARKETS AND INSTITUTIONS

After the successful completion of the course the students should

CO 1: Have overall idea about the financial markets.

CO 2: Develop an understanding on the capital market and capital market instruments

CO 3: Know about the financial service institutions

CO 4: Be able to understand the important credit rating agencies in the country.

CO 5: Gain knowledge on the money market institutions and capital market institutions that help to raise finance in the business.

Credits: 4 Theory Period of 5 Hour per week over a Semester

SEMESTER II

BUSINESS RESEARCH METHODS

After the completion of course the students should

CO 1: Be able to have thorough knowledge on business research and types of research.

CO 2: Understand the methods and techniques of sampling.

CO 3: Gain knowledge on statistical tools used in research and drafting the reports.

CO 4: Have an opportunity to know the measures of central tendency and regression models.

CO 5: Be able to analyse different tests of significance and business forecasting.

Credits: 4 Theory Period of 5 Hour per week over a Semester

BUSINESS ENVIRONMENT

After the completion of course the students should

CO 1: Gain knowledge on concepts of business environment and impact of environment on business and strategic decisions.

CO 2: Be able to analyse industrial policies and regulations.

CO 3: Know economic systems and economic planning.

CO 4: Have an opportunity to understand the technological environment followed by financial institutions in India.

CO 5: Understand globalization , FDI and India's policy towards FDI.

Credits: 4 Theory Period of 5 Hour per week over a Semester

APPLIED COST ACCOUNTING

After the completion of course the students should

CO 1: Understand the basic concepts of cost accounting , relationship with management accounting and preparation of cost sheet.

CO 2: Know material classification , pricing of material issues and returns.

CO 3: Have an opportunity to understand accounting of labour cost and labour turnover.

CO 4: Have knowledge on the concepts of overheads, classification and absorption of overhead cost.

CO 5: Gain knowledge to analyse the features of process costing , contract costing and its practical applications.

Credits: 4 Theory Period of 5 Hour per week over a Semester

HUMAN RESOURCES MANAGEMENT

After the completion of course the students should

CO 1: Gain knowledge on the objectives and implications of human resource management and organisation structure.

CO 2: Have an opportunity to learn about the human resource planning and theories of motivation.

CO 3: Be clear with the human behavior process, learning theories and theories of personality.

CO 4: Be imparted knowledge on discipline , grievances and grievance redressal procedure.

CO 5: Have clear view on organization conflict, leadership and its theories.

Credits: 4 Theory Period of 5 Hour per week over a Semester

COMPUTER APPLICATIONS PRACTICAL – I CREDIT HRS. 6

On successful completion of the course the students should

CO 1: Have thorough knowledge about internet and its operations in business.

CO 2: Gain knowledge on the practical applications of MS Word.

CO 3: Be able to work efficiently in MS Power point.

CO 4: Through light on the importance of Ms Excel.

Credits: 4 Practical Period of 6 Hour per week over a Semester

ELECTIVE II : INDIAN STOCK EXCHANGES

On successful completion of the course the students should

CO1: Have basic idea on stock exchanges and their functions.

CO 2: Understand about stock exchanges and their dealings in India.

CO 3: Know thoroughly about SEBI.

CO 4: Gain knowledge about listing of securities in stock exchange.

CO 4: Develop an understanding about the applications of internet in stock trading.

Credits: 4 Theory Period of 4 Hour per week over a Semester.

SEMESTER III

DIRECT TAXES

After the completion of course the students should

CO 1: Know about the Income Tax Act and its scope.

CO 2: Understand the concepts of salaries and computation of taxable salary.

CO 3: Know to compute taxable income from house property.

CO 4: Gain knowledge about income from business and compute taxable capital gain.

CO 5: Have an understanding on Income Tax Authorities and the procedure of assessment.

Credits: 4 Theory Period of 5 Hour per week over a Semester

MANAGEMENT ACCOUNTING

After the completion of course the students should

CO 1: Have thorough knowledge about management accounting and its basic concepts.

CO 2: Know about ratio analysis and working capital management.

CO 3: Have an understanding on fund flow and cash flow in business.

CO 4: Analyse marginal costing and break even of a company.

CO 5: Gain knowledge on budgeting and its types.

Credits: 4 Theory Period of 5 Hour per week over a Semester

FINANCIAL MANAGEMENT

On successful completion of the course the students should

CO 1: Understand the concepts of financial management.

CO 2: Know about the capital formation in a business.

CO 3: Be aware of financial and operating leverages of a company.

CO 4: Have an understanding the dividend theories .

CO 5: Analyse the working capital management of a company.

Credits: 4 Theory Period of 5 Hour per week over a Semester

INTERNET AND E-COMMERCE

After the completion of course the students should

CO 1: Understand the basic concepts of internet and its technology.

CO 2: Know about the application of internet in business processing.

CO 3: Be aware of the crimes and protection of security in internet.

CO 4: Develop an understanding on issues relating to e-commerce.

CO 5: Analyse the future of internet in business.

Credits: 4 Theory Period of 5 Hour per week over a Semester

COMPUTER APPLICATIONS TALLY PRACTICAL – II

On successful completion of the course the students should

CO 1: Enable the students to create the companies with VAT options.

CO 2: Enable the students to create various ledger and vouchers.

CO 3: the students to maintain stock summary, bill wise details and interest calculations.

CO 4: Gain practical knowledge to prepare trading and profit and loss a/c and financial position.

Credits: 4 Practical Period of 6 Hour per week over a Semester

ELECTIVE III : FUTURES AND OPTIONS

After the completion of course the students should

CO 1: Have an understanding on the basics of Derivatives and Derivative market.

CO 2: Know about Index derivatives.

CO 3: Develop understanding on future and forward contract.

CO 4: Know the basic concepts of option contract and its pay off.

CO 5: Have thorough knowledge on commodity market and about successful commodity markets in the world.

Credits: 4 Theory Period of 4 Hour per week over a Semester

SEMESTER IV

INVESTMENT MANAGEMENT

On successful completion of the course the students should

CO 1: Develop basic idea on investments and its importance.

CO 2: Have basic idea on capital markets and the means of raising long term capital.

CO 3: Know about the basic concepts of fundamental and technical analysis.

CO 4: Understand about the various alternative forms of long term investment.

CO 5: Gain knowledge on portfolio management and theories relating to it.

Credits: 4 Theory Period of 7 Hour per week over a Semester

INTERNATIONAL BUSINESS

After the completion of course the students should

CO 1: Have basic idea about the environment in international business.

CO 2: Develop an idea about the currency markets in the world.

CO 3: Know about export marketing and the measures to improve exports.

CO 4: Understand the preparation and presentation of project report to raise export finance.

CO 5: Gain knowledge on foreign exchange and factors influencing foreign exchange of a country.

Credits: 4 Theory Period of 6 Hour per week over a Semester

ELECTIVE IV : FUNDAMENTAL AND TECHNICAL ANALYSIS

On successful completion of the course the students should

CO 1: Develop an understanding on investments and security analysis.

CO 2: Have an idea about fundamental analysis.

CO 3: Know about industrial company analysis.

CO 4: Have basic idea on technical analysis and theories relating to it.

CO 5: Understand the usage of charts and moving averages in technical analysis.

Credits: 4 Theory Period of 5 Hour per week over a Semester

Program Specific Outcome (PSO): B.Com with Business Analytics

PSO1: Hands-on learning of leading analytical tools.

PSO2: To acquire theoretical knowledge of data science tools, but will also gain exposure to business perspectives.

PSO3: The Career opportunities after completion of B.Com (BA) degree are Business Analyst, Quantitative Analyst, Operations Research Analyst and Market research Analyst.

PSO4: Prospective career opportunities and growth in the field of big data analytics

PSO5: Learning trending programming language for career advancements.

Course Outcome (CO):

SEMESTER – I

Course Outcome: Core I : Financial Accounting

After the completion of course the student should

CO1 : Understand the concepts and conventions financial accounting

CO2 : Explain the basic accounting procedures.

CO3: Explain the preparation of final accounts using AS1 & 5.

CO 4: Explain the preparation of Depreciation and Bank Reconciliation statement

CO5: Relate the concepts of consignment and joint venture.

CO6 : Outline the preparation of partnership accounts.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core II: – Fundamentals of Business Analytics

After the completion of course the student should

CO1: Understand the concept of Business analysis and its importance.

CO2 : Examine the core business process and the technology application.

CO3 : Explain the concepts of OLTP, OLAP and BI

CO4 : Relate the concept of data integration and data modelling

CO5 : Explain KPIs and the performance management.

Credits: 4.Theory Period of 4 Hour per week over a Semester.

Course Outcome: Allied – I: Business Statistics I

After the completion of course the student should

CO1: Understand the concept Business Statistics and the types of data

CO2: Apply statistical concepts to analyze the business problems.

CO3: Outline and analyse the Measures of Central tendency

CO4: Apply statistical concepts in relationship with variations.

CO5: Explain the preparation of graph and table.

Credits: 4Theory Period of 4 Hours per week over a Semester.

Course Outcome: Core III: Computer Applications Practical - I -Analysis with Excel

After the completion of course the student should

CO1 : To understand the Analytical commands in Excel

CO2 : To apply the statistical tools for problem solving

CO3 : To explain a program using analytical tools

Credits: 4 Practical Period of 4 Hours per week over a Semester.

SEMESTER - II

Course Outcome: Core IV: C++

After the completion of course the student should

CO1 : Understand the concepts of Object Oriented Programming in C++

CO2: Explain the concepts of tokens, expression and control structures and their functions.

CO 3: Examine the Classes and Objects and related concepts..

CO4 : Apply the concept of operator overloading

CO5 : Summarise the virtual functions in C++ and their workings.

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core V : Computer Application Practical II – C++

After the completion of course the student should

CO1: Define C++ Programming Structure

CO2 : Analyse operators and functions of C++

CO3 : Demonstrate the object oriented concepts and calculations in programming

Credits: 4 Practical Period of 4 Hours per week over a Semester.

Course Outcome: Allied – II: Business Statistics II

After the completion of course the student should

CO1: Understand the application regression analysis and apply them in business forecasting.

CO2: Explain probability and sampling in data collection.

CO3: Explain the setting of Hypothesis and the deviations in testing.

CO4: Analyze the variances in testing the reliability of a data set

CO5: Understand the data reliability using Multivariate statistics

Credits: 4 Theory Period of 6 Hour per week over a Semester.

SEMESTER - III

Course Outcome: Core VI: Business Data Mining

After the completion of course the student should

CO1 : Understand the concepts of data warehousing, and data processing

CO2 : Define the concepts of association rule mining

CO3 : Explain the concepts of classification of predication in C++

CO4 : Examine Cluster analysis and the methods of clustering using C++

CO5 : Outline the data mining tools

Credits: 4 Theory Period of 6 Hours per week over a Semester.

Course Outcome: Core VII: Security Analysis And Portfolio Management

After the completion of course the student should

CO1: Outline the nature and scope of Investment management

CO2: Explain the concepts of Security valuation using various techniques

CO3: Demonstrate the fundamental analysis and its theories

CO4: Examine the process of portfolio analysis and its relevant theories

CO5: List the techniques of portfolio plans

Credits: 3 Theory Period of 5 Hour per week over a Semester.

Course Outcome: Core VIII : Data base Programming

After the completion of course the student should

CO1: Interpret relational database management concepts

CO2: Develop the tables using normalization

CO3: Illustrate SQL operators and keys

CO4: Explain the overview and history of SQL database

CO5: Motivate the concepts of MongoDB

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Course Outcome: Allied - III : Operations and Strategic Management

After the completion of course the student should

CO1 : Explain the modern operations functions and MRP in production.

CO2 : Understand product life cycle and control measures of operational system.

CO3 : Apply the concepts of basic tools of quality measurement techniques.

CO4 : Understand the maintenance system of production

CO5: Examine the SWOT analysis of different strategies.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Course Outcome: Core IX : Computer Applications Practical III-Data base Programming

After the completion of course the student should

CO1 : Interpret relational database management concepts

CO2: Develop the tables using normalization

CO3: Illustrate SQL operators and keys

Credits: 4 Practical Period of 4 Hour per week over a Semester.

Course outcome Skill based subject -1: Technological Analytics - Java & Linux Fundamentals

After the completion of course the student should

CO1 : Understand the fundamental programming concepts of Java

CO2 : Clear Knowledge on Linux

CO3 : Relate analysis techniques to data sets

Credits: 3 Theory period of 3hour per week over a semester

SEMESTER - IV

Course outcome Core: X - R Programming

After the completion of course the student should

CO1 : Relate R Programming concepts with Datasets

CO2 : Explain data frames using data sets

CO3 : Outline the data manipulating using SQL for data analyse

CO4 : Demonstrate the reading and writing of CSV file

CO5 : Applying statistical tools for complex data analyze

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course outcome Core XI – Business Intelligence

After the completion of course the student should

CO1 : Outline the framework of business intelligence

CO2 : Explain the concepts of Business performance management

CO3 : Illustrate the method of text and web mining

CO4 : Examine the business integration and implementation in business

CO5 : Outline the Legal, ethical and privacy issues in Business Intelligence

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course outcome Core XII–Principles of Financial Management

After the completion of course the student should

CO1 : Define and identify the concepts of Financial Management

CO2: Understand Capital Structure and leverage for strategic Financial Decision Making

CO3: Apply the concept of cost of capital and techniques of capital budgeting to enhance the investment proposal.

CO4: Illustrate the importance and estimation of working capital in the organization

CO5 : Outline the concepts of dividend policy

Credits: 3 Theory Period of 4 Hour per week over a Semester.

Course outcome Allied: IV - Principles of Marketing

After the completion of course the student should

CO1 : Explain the modern marketing concepts.

CO2 : Understand functions of marketing and standardization systems.

CO3 : Understand the concepts of marketing promotional strategy

CO4 : Understand the consumer behavior needs and factors of buying behavior

CO5 : Examine the needs of consumer protection act and new approaches of marketing.

Credits: 4 Theory Period of 5 Hour per week over a Semester.

Course outcome Core: XIII- ManComputer Application Practical IV –Analysis with SPSS &R

After the completion of course the student should

CO1 : Understand the fundamental programming concepts of R

CO2 : Application of SPSS and R Statistical tools to problems

CO3 : Relate analysis techniques to data sets

Credits: 4 Practical Period of 4 Hour per week over a Semester.

Course Outcome skill based course- 2: Practical – I Technological Analytics – Java and Linux Fundamentals

After the completion of course the student should

CO1 : Understand the fundamental programming concepts of Java

CO2 : Clear Knowledge on Linux

CO3 : Relate analysis techniques to data sets

Credits: 3 Practical period of 3 hour per week over a semester

SEMESTER –V

Course outcome Core: XIV-Python

After the completion of course the student should

CO1 : Understand the Python concepts with Datasets

CO2 : Outline the concepts of data frames, data wrangling, plotting and vectorized computation

CO3 : Explain the application of strings

CO4 : Illustrate the unit test using refactoring and generation of XML files

CO5 : Experiment with serializing python objects and packaging python libraries

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course outcome Core: XV Cost and Management Accounting

After the completion of course the student should

CO1 : Recall various concepts of costing and costing methods

CO2 : Analyze the material costing with various methods

CO3 : Explain the labour wage payment system

CO4 : Outline the various concepts relating to management accounting

CO5 : Analyze financial statements using ratio analysis

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course Outcome Core XVI– Income tax

After the completion of course the student should

CO1 : Outline the various terminologies related to income tax

CO2 : Understand the method of calculating and levying tax

CO3: Apply the various tax laws and available provisions in tax computations

CO4: Evaluate the set off and carry forward of losses while calculating personal income

CO5: Analyze self-assessment of income and tax computation

Credits: 4 Theory Period of 6 Hour per week over a Semester.

Course Outcome Core XVII– Computer Applications: Python - Practical-V

After the completion of course the student should

CO1 : Relate statistical calculations

CO2 : Describe pandas

CO3: Apply plotting graphs

Credits: 4

Practical of 4 Hour per week over a Semester.

Course outcome Elective – I [B] -Brand Management

After the completion of course the student should

CO1: Recall the basic concepts of branding and related terms

CO2: Compare brand image building and brand positioning strategies
CO3: Outline the financial models of business

CO3: Analyze the impact of brand, brand loyalty and brand audit.

CO4: Explain the brand rejuvenation and brand monitoring process

CO5: Apply various strategies for brand building and monitoring

Credits: 4 Theory period of 5 Hour per week over a semester

Course outcome Skill based course – 3 : SAS & SCILAB

After the completion of course the student should

CO1: Statistical Analytical Software

CO2: Analysis using Dataset

CO3: Numerical Computational Package

CO4: Programming in SAS, using Procedures within SAS and Data Visualization

Credits: 3 Practical period of 3 Hour per week over a semester

SEMESTER: VI

Course outcome Core XVIII – Hadoop

After the completion of course the student should

CO1: Relate Hadoop concepts with Datasets

CO2: Outline the use of Hadoop distribution file system

CO3: Experiment with Map Reduce application for development

CO4: List the features of Map Reduce applications

CO5: Apply PIG and Hive concepts to integrate

Credits: 4 Theory period of 7 Hour per week over a semester

Course outcome Core XX – Computer Applications: Hadoop - Practicals VI

After the completion of course the student should

CO1: Relate data as data sets

CO2: Describe PIG AND HIVE

CO3: Relate analysis techniques to more complex data sets

Credits: 4 Theory period of 6 Hour per week over a semester

Course outcome Elective – II Cyber Law

CO1: Relate the concepts of Cyberspace

CO2: Outline the technical aspects of encryption

CO3: Analyze the law of procedures and factors influencing computer crime

CO4: Interpret and Analyze the Legal frame work for Electronic Data Interchange

CO5: Examine the authentication of electronic records

Credits: 4 Theory period of 7 Hour per week over a semester

Course outcome Skilled based course – 4 : Practical II – SAS SCILAB

After the completion of course the student should

CO1: Statistical Analytical Software

CO2: Import and generate CSV files

CO3: Analyze the data with different statistical measures

CO4: Perform conditional and logical operations

Credits: 3 Theory period of 4 Hour per week over a semester.

PROGRAM EDUCATIONAL OBJECTIVES (POE)

- PSO1: To provide students to gain knowledge about the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
- PSO2: To impart active learning principles and encourage students to pursue active learning principles in other fields (clinical, education, research, human resources, etc.).
- PSO3: To give comprehensive training to understand and apply various inquiry skills and integrate research and scholarly activities into their academic and career development.
- PSO4: To demonstrate an effective communication skill with a professional convention in psychology to facilitating optimal human functioning.
- PSO5: To support students to cultivate skills to integrating scientific principles and knowledge with professional practice to more effectively address the needs of individuals, families, groups, and society.

SEMESTER – I

Course Outcome: Core I: General Psychology – I

After the completion of course the student should

- CO1: To understand different models of human behavior based on science
- CO2: To analysis major components of biological systems studied in psychology
- CO3: Evaluate the methods to improve memory and problem solving
- CO4: Design, conduct, or evaluate basic psychological techniques to improve personality
- CO5: Apply psychological principles to everyday life.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core II: Developmental Psychology – I

On the successful completion of the course, student will be able to:

- CO1: To remember the basic concepts of human life span under various periods
- CO2: To analysis major components of human life transitions across different ages.
- CO3: Evaluate the different stages of life and its impact on health and well-being
- CO4: Understand the characteristics of each life span stage through empirical findings
- CO5: Apply psychological principles in the developmental process.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Allied A I: Biopsychology – I

After the completion of course the student should

CO1: Able to evaluate basic brain structures and functional neural systems

CO2: To remember process of signalling between nerve cells including chemical neurotransmitters

CO3: To analysis the role of neurotransmitters in human functioning

CO4: To understand the functional organization of the sensory systems

CO5: To apply the bio-psycho premises to predict, enhance human emotions.

Credits: 4. Theory Period of 4 Hour per week over a Semester.

SEMESTER II

Course Outcome: Core III: General Psychology – II

On the successful completion of the course, student will be able to:

CO1: Define the fundamental concepts of psychology

CO2: Identify the basic psychological processes underlying human behavior

CO3: Develop knowledge about various levels of consciousness

CO4: Apply Learning principles in influencing behavior and decision making

CO5: Analyze various factors associated with stigma surrounding psychological problems.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core IV: Developmental Psychology – II

After the completion of course the student should

CO1: Recognize the physiological and psychological changes occurring in the adolescent years

CO2: Express the importance of developing the life skills in the adulthood

CO3: Interpret compassionate behavior seen towards fellow individuals in old age

CO4: Predict the difficulties witnessed in making decisions upon middle Age

CO5: Analyze the interest seen in adolescents towards eradicating myths in psychology.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Allied A II: Biopsychology – II

On the successful completion of the course, student will be able to:

CO1: Recall the influence of brain over various physiological human motives

CO2: Identify the importance of brain damage and various disorders related to human brain

CO3: Examine the role of limbic system in managing human emotions

CO4: Illustrate the role of left cerebral hemisphere in decision making

CO5: Analyze the impact of neural degeneration in an individual.

Credits: 4.Theory Period of 4 Hour per week over a Semester.

SEMESTER III

Course Outcome: Core V: Abnormal Psychology – I

After the completion of course the student should

CO1: Analysis the interaction of biological, cognitive and sociocultural factors in abnormal behavior

CO2: Evaluate psychological research relevant to the study of abnormal behaviour

CO3: Remember the cultural and ethical considerations in diagnosis the disorders

CO4: Design, conduct, or evaluate treatment process

CO5: Apply the contemporary theories and research related to causes and treatments of psychological disorders

Credits: 4.Theory Period of 5 Hour per week over a Semester.

Course Outcome: Core VI: Experimental Psychology – I

On the successful completion of the course, student will be able to:

CO1: To become proficient in measuring sensory dimensions of human behaviour

CO2: To become proficient in measuring personality tests

CO3: To become proficient in measuring sensory motor test in assessing human efficiency

CO4: To become proficient in measuring attention aspects of human behaviour

CO5: To become proficient in measuring tests to learning and association.

Credits: 4.Theory Period of 4 Hour per week over a Semester.

Course Outcome: Allied B I: Psychological Statistics

After the completion of course the student should

CO1: Evaluate the primary methods of inquiry and statistical analysis in psychology

CO2: Understand the advantages and limitations of different statistical methods used in psychological research

CO3: To apply an appropriate statistical analysis for the data

CO4: To analysis the role of different statical techniques in psychological research

CO5: Remember the ethics in preparing the data for analysis

Credits: 4. Theory Period of 4 Hour per week over a Semester.

Course Outcome: Skill Based Subject I: Counselling Psychology – I

On the successful completion of the course, student will be able to:

CO1: To apply the counselling models across all stages of development

CO2: To evaluate about need of counselling in career and work, and dealing life transition

CO3: Understand the role of counselling in Crisis intervention, disaster and trauma.

CO4: Analysis the different models of counselling psychology

CO5: Apply in relationship difficulties-including marital and family difficulties.

Credits: 3. Theory Period of 3 Hour per week over a Semester.

SEMESTER IV

Course Outcome: Core VII: Abnormal Psychology II

After the completion of course the student should

CO1: Define the experience of anxiety and related disorders in an individual

CO2: Outline the disorders of sexual variance and cognitive impairment

CO3: Identify the spectrum disorders of schizophrenia

CO4: Identify the bipolar tendencies experienced by an individual

CO5: Examine the various forms of therapies and their effectiveness

Credits: 4. Theory Period of 5 Hour per week over a Semester.

Course Outcome: Core VIII: Experimental Psychology – II

After the completion of course the student should

CO1: To assess and interpret the Perception of an individual.

CO2: To assess the various emotion pattern of an individual.

CO3: To analyze the need pattern of social motive

CO4: To evaluate the reaction time of an individual

CO5: To analyze the learning process of an individual.

Credits: 4. Theory Period of 4 Hour per week over a Semester.

Course Outcome: Allied B II: Research Methodology

On the successful completion of the course, student will be able to:

CO1: Define the various types of research in psychology

CO2: Outline the formation of hypothesis

CO3: Identify the various methods of research design

CO4: Identify the various methods used for testing the hypothesis

CO5: Examine the statistical techniques and report writing

Credits: 3. Theory Period of 4 Hour per week over a Semester.

Course Outcome: Skill Based Subject II: Testing and Assessment

After the completion of course the student should

CO1: Define the fundamental concepts of testing and assessment

CO2: Classify the various scales of measurement and psychometric properties

CO3: Identify the various assessment tools available under intelligence

CO4: Identify the meaning and various assessment tools used for measuring personality

CO5: Examine various interest, ability and aptitude scales used for career-based assessments

Credits: 3. Theory Period of 3 Hour per week over a Semester.

SEMESTER V

Course Outcome: Core IX: Social Psychology – I

After the completion of course the student should

CO1: To understand the key substantive content of the field of social psychology

CO2: Use existing knowledge and concepts to identify the causes of the social behavior

CO3: Develop the abilities to analysis regarding the principles of social behaviour

CO4: Able to evaluate empirical findings to explain, predict, and influence behavior.

CO5: Remember the ethics in social psychology research.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core X: Industrial / Organizational Psychology – I

On the successful completion of the course, student will be able to:

CO1: To analyze the psychological principles influence behavior in the workplace.

CO2: Evaluate individual behavior in the workplace as influenced by personality, values, perceptions, and motivations

CO3: Understand the management style as it relates to influencing and managing behavior in work settings

CO4: Create modules to enhance group dynamics, communication, leadership

CO5: Apply relevant contemporary theories, concepts and models to analyze real life management situations.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core XI: Health Psychology

After the completion of course the student should

CO1: To understand the effects of bio, psycho and social factors on a person's health

CO2: Knowledge about research in health psychology and critically evaluate the key studies

CO3: Apply health psychology theories and research findings to address health-related issues

CO4: Analysis the effects of health status and changes in health based on a person's emotions, thinking, and behaviour

CO5: Create the healthy relationship and to understand health compromising behaviors.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core XII: Experimental Psychology – III

On the successful completion of the course, student will be able to:

CO1: To become proficient in measuring social dimensions of human behaviour

CO2: To become proficient in measuring personality tests

CO3: To become proficient in measuring memory and learning aspects of human behaviour

CO4: To become proficient in measuring individual's aspiration

CO5: To become proficient in measuring tests related to imagination

Credits: 4. Theory Period of 4 Hour per week over a Semester.

Course Outcome: Elective I: Consumer Behaviour:

On the successful completion of the course, student will be able to:

CO1: To understand consumer behaviour in an informed and systematic way

CO2: To analyses personal, socio-cultural, and environmental dimensions related to consumer behaviour

CO3: To enable students in designing and evaluating the marketing strategies

CO4: Application of market research in framing effective marketing strategies

CO5: Analyze the major stages which consumers usually go through when making a consumption

Credits: 4. Theory Period of 5 Hour per week over a Semester.

Course Outcome: Skill Based Subject III: Life Skill Development

On the successful completion of the course, student will be able to:

CO1: To Identify, understand, and apply contemporary theories of leadership

CO2: Understand the communication process, its benefits and challenges

CO3: Create strategies to work with others to achieve specific goals

CO4: Explore, understand, and lead, guided by the values of self-awareness

CO5: Evaluate and improve upon presentation skills strengths and weaknesses

Credits: 3. Theory Period of 3 Hour per week over a Semester.

SEMESTER VI

Course Outcome: Core XIII: Social Psychology – II

After the completion of course the student should

CO1: Define the basic concepts under social influence

CO2: Outline various factors associated with aggressive tendencies of a person

CO3: Identify the dynamics of close relationships in an individual

CO4: Identify the extent of individual contribution towards the group success

CO5: Examine the effectiveness of various leadership styles.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core XIV: Industrial / Organizational Psychology – II

On the successful completion of the course, student will be able to:

CO1: Define the motivation and job satisfaction.

CO2: Outline the various components of job involvement

CO3: Identify the stress in the workplace.

CO4: Identify the various aspects of engineering psychology

CO5: Examine the effectiveness of Industrial Clinical Psychology.

Credits: 4. Theory Period of 6 Hour per week over a Semester.

Course Outcome: Core XV: Experimental Psychology IV

After the completion of course the student should

CO1: To assess and interpret the thinking of an individual.

CO2: To assess the various social skills of an individual.

CO3: To analyze the level of aspiration

CO4: To evaluate the intelligence of an individual

CO5: To analyze the ability of an individual.

Credits: 4. Theory Period of 5 Hour per week over a Semester.

Course Outcome: Elective II: Psychology of Adjustment

On the successful completion of the course, student will be able to:

CO1: Define the meaning and types of Adjustment.

CO2: Outline the negative emotions and adjustment

CO3: Identify the Social and Psychology of Adjustment

CO4: Identify the importance of quality of life

CO5: Examine the methods to cope stress.

Credits: 4. Theory Period of 5 Hour per week over a Semester.

Course Outcome: Elective III: Forensic Psychology

CO1: Define the meaning and origins of legal psychology.

CO2: Outline the strength and validity of the evidence.

CO3: Identify the psychology of confession.

CO4: Analyze the Profiling criminals from the crime scene.

CO5: Examine the offending behavior programmes.

Credits: 4. Theory Period of 5 Hour per week over a Semester.

Course Outcome: Subject Based Subject IV: Personality Assessment

On the successful completion of the course, student will be able to:

CO1: Define the fundamental concepts of personality assessment.

CO2: Classify the various scales of self – report.

CO3: Identify the various assessment tools available under clinical disorders.

CO4: Identify the various performance-based measures.

CO5: Examine various interest, ability and aptitude scales used for career-based assessment.

Credits: 3. Theory Period of 3 Hour per week over a Semester.