Loyola Degree College (YSRR)

(A Christian Minority Institution)

Pulivendula – 516390, YSR Kadapa District, Andhrapradesh

COURSE OUTCOMES

Department of Physics

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS & MPCS	I	PHY01	Mechanics, Waves and Oscillations

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

CO 1: Understand Newton's laws of motion and motion of variable mass system and its

application to rocket motion and the concepts of impact parameter, scattering cross section.

CO 2: Apply the rotational kinematic relations, the principle and working of gyroscope and it applications and the precessional motion of a freely rotating symmetric top.

CO 3: Comprehend the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.

CO 4: Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.

CO 5: Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.

CO 6: Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.

CO 7: Figure out the formation of harmonics and overtones in a stretched string and acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS	II	PHY02	Wave Optics

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

CO 1: Understand the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.

CO 2: Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating.

CO 3: Describe the construction and working of zone plate and make the comparison of zone plate with convex lens.

CO 4: Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity..

CO 5: Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.

CO 6: Explain about the different aberrations in lenses and discuss the methods of minimizing them.

CO 7: Understand the basic principles of fibre optic communication and explore the field of Holography and Nonlinear optics and their applications.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS	III	PHY03	Heat and Thermodynamics

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

CO 1: Understand the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases

CO 2: Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy,the thermodynamic potentials and their physical interpretations.

CO 3: Understand the working of Carnot's ideal heat engine, Carnot cycle and its efficiency

CO 4: Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications.

CO 5: Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures.

CO 6: Examine the nature of black body radiations and the basic theories.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS	IV	PHY04	Electricity, Magnetism & Electronics

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

CO 1: Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant.

CO 2: Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriate circumstances.

CO 3: Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electrical currents.

CO 4: Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagnetic waves.

CO 5: Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q- factor, Power factor and the comparative study of series and parallel resonant circuits.

CO 6: Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors

CO 7: Understand the operation of basic logic gates and universal gates and their truth tables.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS	IV	PHY05	Modern Physics

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

CO 1: Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics.

CO 2: Develop critical understanding of concept of Matter waves and Uncertainty principle.

CO 3: Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and its applications.

CO 4: Examine the basic properties of nuclei, characteristics of Nuclear forces, salient features of Nuclear models and different nuclear radiation detectors.

CO 5: Classify Elementary particles based on their mass, charge, spin, half life and interaction.

CO 6: Get familiarized with the nano materials, their unique properties and applications.

CO 7: Increase the awareness and appreciation of superconductors and their practical applications.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS	V	PHY06C	Applications of Electricity & Electronics

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

CO 1: Identify various components present in Electricity& Electronics Laboratory.

CO 2: Acquire a critical knowledge of each component and its utility (like resistors, capacitors, inductors, power sources etc.).

CO 3: Demonstrate skills of constructing simple electronic circuits consisting of basic circuit elements.

CO 4: Understand the need & Functionality of various DC & AC Power sources.

CO 5: Comprehend the design, applications and practices of various electrical & Electronicdevices and also their trouble shooting.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS	V	PHY07C	Electronic Instrumentation

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

CO 1: Identify various facilities required to set up a basic Instrumentation Laboratory.

CO 2: Acquire a critical knowledge of various Electrical Instruments used in the Laboratory.

CO 3: Demonstrate skills of using instruments like CRO, Function Generator, Multimeter etc. through hands on experience.

CO 4: Understand the Principle and operation of different display devices used in the display systems and different transducers

CO 6: Comprehend the applications of various biomedical instruments in daily life like B.P. meter, ECG, Pulse oxymeter etc. and know the handling procedures with safety and security.

Department of English

PROGRAM	SEMESTER	CODE	COURSE
B.A, B.SC, B.COM	I	ENG01	A Course in Communication and Soft Skills

By the end of the course the learner will be able to:

CO1: Use grammar effectively in writing and speaking.

CO2: Demonstrate the use of good vocabulary.

CO3: Demonstrate an understating of writing skills.

CO4: Acquire ability to use Soft Skills in professional and daily life.

CO5: Confidently use the tools of communication skills.

PROGRAM	SEMESTER	CODE	COURSE
B.A, B.SC, B.COM	II	ENG02	A Course in Reading and Writing Skills

By the end of the course the learner will be able to:

CO1: Use reading skills effectively.

CO2: Comprehend different texts.

CO3: Interpret different types of texts.

CO4: Analyze what is being read.

CO5: Build up a repository of active vocabulary.

CO6: Use good writing strategies.

CO7: Write well for any purpose.

CO8: Improve writing skills independently for future needs.

PROGRAM	SEMESTER	CODE	COURSE
B.A, B.SC, B.COM	III	ENG03	A Course in Conversational Skills

By the end of the course the learner will be able to:

CO1: Speak fluently in English.

CO2: Participate confidently in any social interaction.

CO3: Face any professional discourse.

CO4: Demonstrate critical thinking.

CO5: Enhance conversational skills by observing the professional interviews.

Department of Chemistry

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC,BZC &CZCA	I	CHE 01	Inorganic and Physical Chemistry

CO1:

1. Understand the basic concepts of p-block elements

2. Explain the difference between solid, liquid and gases in terms of inter molecular interactions.

3. Apply the concepts of gas equations, pH and electrolytes while studying other

chemistry courses.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC,BZC&CZCA	II	CHE02	Organic and General Chemistry

CO2:

1. Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.
2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
3. Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.
4. Correlate and describe the stereo chemical properties of organic compounds and reactions.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, BZC &CZCA	III	CHE 03	Organic Chemistry and Spectroscopy

CO3:

1. Understand preparation, properties and reactions of halo alkanes, halo arenes and oxygen containing functional groups.
2. Use the synthetic chemistry learnt in this course to do functional group transformations.
3. To propose possible mechanisms for any relevant reaction
4.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, BZC &CZCA	IV	CHE 04	Inorganic, Organic and Physical Chemistry

CO4:

1. To learn about the laws of absorption of light energy by molecules and the subsequent photo chemical reactions.
2. To understand the concept of quantum efficiency and mechanism of photochemical reactions.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, BZC &CZCA	IV	CHE 05	Inorganic, Organic and Physical Chemistry

CO5:

1. Understand concepts of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values
2. Application of quantization to spectroscopy.
3. Various types of spectra and their use in structure determination.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, BZC & CZCA	V	CHE 06	Environmental Chemistry

CO6:

1. Understand the environment functions and how it is affected by human activities.

2. Acquire chemical knowledge to ensure sustainable use of the world's resources and ecosystems services.

3. Engage in simple and advanced analytical tools used to measure the different types of pollution.

4. Explain the energy crisis and different aspects of sustainability.

5. Analyze key ethical challenges concerning biodiversity and understand the moral principles, goals and virtues important for guiding decisions that affect Earth’s plant and animal life.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, BZC &CZCA	V	CHE 07	Green Chemistry and Nanotechnology

CO7:

1. Understand the importance of Green chemistry and Green synthesis.

2. Engage in Microwave assisted organic synthesis.

3. Demonstrate skills using the alternative green solvents in synthesis.

4. Demonstrate and explain enzymatic catalysis.

5. Analyse alternative sources of energy and carry out green synthesis.

6. Carry out the chemical method of nanomaterial synthesis.

Department of commerce

PROGRAM	SEMESTER	CODE	COURSE
B.COM CA/GENERAL	I	COM1A COM1B COM1C	Fundamentals of Accounting Business Organization and Management -Information Technology

C01-1A -Fundamentals of Accounting

- Identify transactions and events that need to be recorded in the books of accounts.
- Equip with the knowledge of accounting process and preparation of final accounts ofsole trader.
- Develop the skill of recording financial transactions and preparation of reports inaccordance with GAAP.
- Analyze the difference between cash book and pass book in terms of balance andmake reconciliation.
- Critically examine the balance sheets of a sole trader for different accounting periods.

  Design new accounting formulas & principles for business organizations

CO2-1B -Business Organization and Management

At the end of the course, the student will be able to

- Understand different forms of business organizations.
- Comprehend the nature of Joint Stock Company and formalities to promote a Company.
- Describe the Social Responsibility of Business towards the society.
- Critically examine the various organizations of the business firms and judge the bestamong them.
- Design and plan to register a business firm. Prepare different documents to register acompany at his own.
- Articulatenew models of business organizations.

CO3-1-C- INFORMATION TECHNOLOGY

A. Remembers and states in a systematic way (Knowledge)

1. Describe the fundamental hardware components that make up a computer'shardware and the role of each of these components
2. understand the difference between an operating system and an applicationprogram, and what each is used for in a computer
3. Use technology ethically, safely, securely, and legally
4. Use systems development, word-processing, spreadsheet, and presentationsoftware to solve basic information systems problems

B. Explains (Understanding)

5. Apply standard statistical inference procedures to draw conclusions from data
6. Retrieve information and create reports from databases
7. Interpret, produce, and present work-related documents and informationeffectively and accurately.

C. Critically examines, using data and figures (Analysis and Evaluation)

8. Analyse compression techniques and file formats to determine effective ways ofsecuring, managing, and transferring data
9. Identify and analyse user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing based systems.
10. Analyse a complex computing problem and to apply principles of computing andother relevant disciplines to identify solutions.
11. Identify and analyse computer hardware, software

PROGRAM	SEMESTER	CODE	COURSE
B.COM CA/GENERAL	II	COM2A COM2B COM2C	Financial Accounting Business Economics E-Commerce And Web Designing

CO2A-Financial Accounting

- Understand the concept of consignment and learn the accounting treatment of thevarious aspects of consignment.
- Analyze the accounting process and preparation of accounts in consignment and jointventure.
- Distinguish Joint Venture and Partnership and to learn the methods of maintainingrecords under Joint Venture.
- Determine the useful life and value of the depreciable assets and maintenance ofReserves in business entities.
- Design an accounting system for different models of businesses at his own using theprinciples of existing accounting system.

CO2B-Business Economics

- Describe the nature of economics in dealing with the issues of scarcity of resources.
- Analyze supply and demand analysis and its impact on consumer behaviour.
- Evaluate the factors,such as production and costs affecting firmsbehaviour.
- Recognize market failure and the role of government in dealing with those failures.
- Use economic analysis to evaluate controversial issues and policies.
  Apply economic models for managerial problems, identify their relationships, andformulate the decision making tools to be applied for businesss

CO2-E-commerce and Web Designing

B. Remembers and states in a systematic way (Knowledge)

1. Understand the foundations and importance of E-commerce
2. Define Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational
3. Describe the infrastructure for E-commerce
4. Discuss legal issues and privacy in E-Commerce
5. Understand the principles of creating an effective web page, including an in-depthconsideration of information architecture

B. Explains (Understanding)

6. Recognize and discuss global E-commerce issues
7. Learn the language of the web: HTML and CSS.

C. Critically examines, using data and figures (Analysis and Evaluation)

8. Analyze the impact of E-commerce on business models and strategy
9. Assess electronic payment systems
10. Exploring a web development framework as an implementation example and create dynamically generated web site complete with user accounts, page levelsecurity, modular design using cs

D. Working in 'Outside Syllabus *Area' under a Co-curricular Activity*(Creativity) Use the Systems Design Approach to implement websites with the following steps:

- Define purpose of the site and subsections
- Identify the audience
- Design and/or collect site content
- Design the website theme and navigational structure
- Design & develop web pages including: CSS Style Rules, Typography, Hyperlinks, Lists, Tables, Frames, Forms, Images, Behaviors, CSS Layouts

E. Build a site based on the design decisions and progressively incorporate tools andtechniques covered

PROGRAM	SEMESTER	CODE	COURSE
B.COM CA / GENERAL	III	COM3A COM3B COM3C	**Advanced Accounting** **Business Statistics** **Programming with C & C++**

CO1-3A- Advanced Accounting

- Understand the concept of Non-profit organizations and its accounting process
- Comprehend the concept of single-entry system and preparation of statement ofaffairs
- Familiarize with the legal formalities at the time of dissolution of the firm
- Prepare financial statements for partnership firm on dissolution of the firm.
- Employ critical thinking skills to understand the difference between the dissolution ofthe firm and dissolution of partnership

CO2-3B- Business Statistics

- Understand the importance of Statistics in real life

- Formulate complete, concise, and correct mathematical proofs.
- Frame problems using multiple mathematical and statistical tools, measuringrelationships by using standard techniques.
- Build and assess data-based models.
- Learn and apply the statistical tools in day life.
- Create quantitative models to solve real world problems in appropriate contexts.

CO3- 3C- Programming with C & C++

C. Remembers and states in a systematic way (Knowledge)

1. Develop programming skills
2. Declaration of variables and constants use of operators and expressions
3. learn the syntax and semantics of programming language
4. Be familiar with programming environment of C and C++
5. Ability to work with textual information (characters and strings) & arrays

D. Explains (Understanding)

6. Understanding a functional hierarchical code organization
7. Understanding a concept of object thinking within the framework of functionalmodel
8. Write program on a computer, edit, compile, debug, correct, recompile and run it

E. Critically examines, using data and figures (Analysis and Evaluation)

9. Choose the right data representation formats based on the requirements of theproblem
10. Analyze how C++ improves C with object-oriented features
11. Evaluate comparisons and limitations of the various programming constructs andchoose correct one for the task in hand.

D. Working in 'Outside Syllabus *Area' under a Co-curricular Activity*(Creativity)

Planning of structure and content, writing, updating and modifying computer programs for user solutions

E. Exploring C programming and Design C++ classes for code reuse (Practical skills***)

PROGRAM	SEMESTER	CODE	COURSE
B.COM CA/GENERAL	IV	COM4A	Corporate Accounting
		COM4B	Cost and Management Accounting
		COM4C	Income Tax
		COM4D	Business Law
		COM4E	Database Management System

CO1- 4A-Corporate Accounting

1. Understand the Accounting treatment of Share Capital and aware of process of bookbuilding.
2. Demonstrate the procedure for issue of bonus shares and buyback of shares.

3. Comprehend the important provisions of Companies Act, 2013 and prepare finalaccounts of a company with Adjustments.
4. Participate in the preparation of consolidated accounts for a corporate group.
5. Understand analysis of complex issues, formulation of well-reasoned arguments andreaching better conclusions.
6. Communicate accounting policy choices with reference to relevant law s andaccounting standards.

CO2-4B- Cost and Management Accounting

7. Understand various costing methods and management techniques.
8. Apply Cost and Management accounting methods for both manufacturing and serviceindustry.
9. Prepare cost sheet, quotations, and tenders to organization for different works.
10. Analyze cost-volume-profit techniques to determine optimal managerial decisions.
11. Compare and contrast the financial statements of firms and interpret the results. Prepare analysis of various special decisions, using relevant management techniques

CO3-4C- Income Tax

- Acquire the complete knowledge of the tax evasion, tax avoidance and tax planning.
- Understand the provisions and compute income tax for various sources.
- Grasp amendments made from time to time in Finance Act.
- Compute total income and define tax complicacies and structure.
- Prepare and File IT returns of individual at his own.

CO4-4D: Business Law

1. Understand the legal environment of business and laws of business.
2. Highlight the security aspects in the present cyber-crime scenario.
3. Apply basic legal knowledge to business transactions.
4. Understand the various provisions of Company Law.
5. Engage critical thinking to predict outcomes and recommend appropriate action onissues relating to business associations and legal issues.
6. Integrate concept of business law with foreign trade.

CO5-4E: Database Management System

At the end of the course, the students is expected to DEMONSTRATE the following cognitive abilities (thinking skill) and psychomotor skills.

F. Remembers and states in a systematic way (Knowledge)

1. Understand the role of a database management system in an organization.
2. Understand basic database concepts, including the structure and operation of therelational data model.
3. Understand and successfully apply logical database design principles, includingE-R diagrams and database normalization
4. Understand Functional Dependency and Functional Decomposition

G. Remembers and states in a systematic way (Knowledge)

5. Understand the role of a database management system in an organization.
6. Understand basic database concepts, including the structure and operation of therelational data model.
7. Understand and successfully apply logical database design principles, includingE-R diagrams and database normalization
8. Understand Functional Dependency and Functional Decomposition

H. Explains (Understanding)

9. To design and build a simple database system and demonstrate competence withthe fundamental tasks involved with modeling, designing, and implementing a DBMS.
10. Perform PL/SQL programming using concept of Cursor Management, ErrorHandling, Packages

I. Critically examines, using data and figures (Analysis and Evaluation)

11. Apply various Normalization techniques

Model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model

PROGRAM	SEMESTER	CODE	COURSE
B.COM CA/GENERAL	V	COM18A COM19A COM16B COM17B	Management Accounting And Practice Cost Control Techniques Advertising And Media Planning Sales Promotion And Practice

CO1-18 A: Management Accounting And Practice

Upon successful completion of the course the student will be able to

1. Understand the nature and scope of management accounting and differentiatemanagement accounting, financial accounting and cost accounting.
2. Compute ratios and draw inferences
3. Analyze the performance of the organization by preparing funds flow statement andcash flow statements ,Prepare cash budget, fixed budget and flexible budget**:**

CO2-19A: Cost Control Techniques

Up on completion of the course the student will be able to

1. Differentiate cost control, cost reduction concepts and identify effective techniques.
2. Allocate overheads on the basis of Activity Based Costing.
3. Evaluate techniques of cost audit and rules for cost record.

4: Appraise the application of marginal costing techniques to evaluate performances,fix selling price, make or buy decisions.

CO3-16B: Advertising and Media Planning

1. Understand the role of advertising in business environment
2. Understand the legal and ethical issues in advertising
3. Acquire skills in creating and developing advertisements
4. Understand up-to-date advances in the current media industry.
5. Acquire the necessary skills for planning an advertising media campaign.

CO4-17B: Sales Promotion and Practice

By the end of the course students are able to:

1. Analyse various sales promotion activities
2. Get exposed to new trends in sales Promotion
3. Understand the concepts of creativity in sales promotion
4. Enhance skills to motivate the salesperson to reach their targets
5. Develop the skills of designing of sales promotion events

Department of SANSKRIT

PROGRAM	SEMESTER	CODE	COURSE
B.A, MPC, MPS MPCS,MSCSBCOM BZC.	I	SKT 01	PRACHINA SAHITYAM ADHUNIKA SAHITYAM PROSE AND GRAMMAR
B.A, MPC, MPS MPCS,MSCSBCOM BZC.	II	SKT2	PRACHINA SAHITYAM ADHUNIKA SAHITYAM PROSE AND GRAMMAR
B.A, MPC, MPS MPCS,MSCSBCOM BZC.	III	SKT3	RUPAKANI ,UPANISAD

COURSE 1. SEM 1:

The Mahakavya 'Raghuvamsam' is believed to be one of the mature period work of poet Kalidasa. The date of Kalidasa is one of the most perplexing questions in the history of Sanskrit literature. The most popular theory of the day states that the poet flourished during the reign of Chandragupta II of the Imperial Gupta dynasty. The Mahakavya 'Raghuvamsam' is written in 19 cantos composed of some 1,570 verses. From one to twentyfive verses of canto 1 are taught for B.A. Semester 1 students. Translation, explanation of the verses, story of the canto, characteristics of Raghu clan. Characteristics of Dilipa, Sources of the plot etc are discussed thoroughly. Students love to read this kavya which increases their vocabulary and mobilizes their creative energy. ii) Sisupalavadham is a work of classical Sanskrit Poetry composed by Magha in 7th or 8th century. It is an epic poem in twenty sargas of about 1800 highly ornate stanzas and is considered of one of the Six Sanskrit Mahakavyas or "great epics". It is also known as the "Magha Kavya" after its author. The story of the kavya is taken from the 'Sabha Parva' of the Mahabharata. The Kavya is an important source on the history of Indian ornaments and costumes. From Verses one to thirty of canto 1 are selected for B.A. Semester 1 students Introduction of the text and Author, Appropriateness of the Title, Grammar, Translation, Explanation, Poetic excellence, Thematic analysis etc are explained vividly through the selected poem.

COURSE 2. SEM 2 :

The selected prose is an extraction from 'Kadambari' a katha Kavya written by Banabhatta. The theme of this prose kavya is the fascinating love story of Candrapida Kadambari and Pundarika Mahasveta in their several births. In our selected prose we find Sukanasa, the wise and pious minister of Tarapida, likes to give some advices to Candrapida before to be the king of Ujjain so that candrapida can rule long over his subjects and able to spread his kingdom peacefully. The pictures of Society and political thoughts have been nicely depicted in Sukanasopadesa. Banabhatta was a 7th century Sanskrit Prose writer of India. He was a court poet of King Harshavardhana. The writer died before finishing the prose kavya Kadambari and it was completed by his Son Bhusanabhatta.

COURSE 3. SEM 3:

MADYAMA VYAYOGA is the masterpiece of BASHA MAHAKAVI . It is a drama in seven Acts, based on the Love story of King Dusyanta and the maiden Sakuntala. Poet Kalidasa has gained worldwide recognition by this drama. The tradition of translating the work of Kalidasa is Continuing even today. The plot of the drama has been taken from the epic Mahabharata, but the dramatist has introduced many noble innovations. One important innovation is the 'Curse of Durvasa', a highly irritable sage to whom Sakuntala fails to show hospitality. The character of the foster father of the heroine, Kanva, is also another innovation. He is full of human kindness and not like an austere ascetic. He loves his daughter and appreciates her way of life. The plot is based upon love affair, secret marriage, separation of imprecation and reunion of immortal love of Dusyanta and Sakuntala. The basic theme of the drama which the dramatist wants to say is – True love is immortal. Superb characterization, study of human nature and wonderful mastery over the language has given the poet worldwide recognition. From this text students can know how to love nature and how to behave with companion which becomes very much pertinent in day to day life. The entire drama has been prescribed in the curriculum of the Sem-III. General course. Text reading, Grammar, Translation, Explanation, Poetic excellence, plot personification of nature etc. are vividly taught. ii) Technical Terms from Sanskrit Dramaturgy:

Sanskrit Grammar Book: i) Laghusiddhanta–Kaumudi Samjna Prakarana by Varadaraja ii) Laghusiddhanta-Kaumudi Sandhi Prakarana iii) Laghusiddhanta–Kaumudi Vibhaktyartha Prakarana About some important Schools of Grammar: Grammar is one of the most important branches of Sanskrit Literature. From very early times till most recently Grammar has held a unique place. The most popular of all the Schools of Grammar is Panini. Panini has mentioned many Grammarians among which Kasyapa, Gargya, Galava, Sakatayana, Sphotayana etc may be cited. The names of eminent Grammarians and their books are – i) Panini wrote Astadhyayi, a work in eight chapters. In the book we find, the arrangement of rules is scientifically and systematically discussed.

Department of Mathematics

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS & MPCS MSCS	I	MAT01	Differential Equation

CO1: Differential Equations

1. After successful completion of this course, the student will be able to;Solve lineardifferential equations
2. Convert nonexact homogeneous equations to exact differential equations by usingintegratingfactors.
3. Know the methods of finding solutions of differential equations of the first order but not ofthe first degree.
4. Solve higher-order linear differential equations, both homogeneous and non homogeneous,withconstant coefficients.
5. Understand the concept and apply appropriate methods for solving differential equations

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS MSCS	II	MAT02	Solid Geometry

CO2: **Solid Geometry**

After successful completion of this course, the student will be able to;

1. get the knowledge of planes.

2. basic idea of lines, sphere and cones.
3. understand the properties of planes, lines, spheres and cones.
4. express the problems geometrically and then to get the solution.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS MSCS	III	MAT03	Abstract Algebra

CO3: ABSTRACT ALGEBRA

After successful completion of this course, the student will be able to;

1. acquire the basic knowledge and structure of groups, subgroups and cyclic groups.
2. get the significance of the notation of a normal subgroups.
3. get the behavior of permutations and operations on them.
4. study the homomorphisms and isomorphisms with applications.
5. understand the ring theory concepts with the help of knowledge in group theory and to provethe theorems.
6. understand the applications of ring theory in various fields.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS MSCS	IV	MAT04	Real Analysis

CO4: REAL ANALYSIS

After successful completion of this course, the student will be able to

1. get clear idea about the real numbers and real valued functions.
2. obtain the skills of analyzing the concepts and applying appropriate methods for testingconvergence of a sequence/ series.
3. test the continuity and differentiability and Riemann integration of a function.
4. know the geometrical interpretation of mean value theorems.

PROGRAM	SEMESTER	CODE	COURSE
B.Sc MPC, MPS, MPCS	IV	MAT05	Linear Algebra

C05: LINEAR ALGEBRA

After successful completion of this course, the student will be able to;

1. understand the concepts of vector spaces, subspaces, basises, dimension and their properties
2. understand the concepts of linear transformations and their properties
3. Understand the elementary properties of matrices and rank of matrix
4. Apply cayley Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS,MSCS	V	MAT06	Multiple integrals and applications of vector calculus

CO6: Multipule integrals and applications of vector calculus

After successful completion of this course, the student will be able to;

1.Learn mulipule integrals as a natural extension of definite integral to a function of two variables in the case of double integral/three variables in the case of triple integral

2.Learn application interms of finding surface area by double integral and volume by triple integral

3.Determine the gradient ,divergence and curl of avector and vector identities

4.Evaluate line ,surface and volume integrals

5.Understand relation between surface n volume integrals (Gauss Divergence theorem),relation between line integral and volume integral(Greens theorem),relation between line n surface integral(Stockes theorem)

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPC, MPS, MPCS,MSCS	V	MAT07	Integral transforms with applications

CO7: Integral transforms with applications

After successful completion of this course, the student will be able to;

1. Evaluate Laplace transform of Certain function,find laplace transforms of derivatives and of integrals.

2. Determine properties of laplace transforms which may be solved by applications of special functions namely dirasdelta function,error function,bessels function and Periodic function.

3. Understand properties of inverse laplace transforms ,find inverse laplace transforms of derivaties and of integrals

4. Solve ordinary differential equations with constant /variable coefficients by using laplace transforms method

5. Comprehend the properties of fourier transforms and solve problems related to finite fourier transforms.

Department of Botany

PROGRAM	SEMESTER	CODE	COURSE
B.SC I BZC	**I**	**BOT 01**	**Fundamentals of Microbes and Non-vascular Plants**

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

CO1: Explain origin of life on the earth.

CO2: Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.

CO3: Classify fungi, lichens, algae and bryophytes based on their structure, Reproduction and life cycles.

CO4: Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.

CO5: Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.

CO6: Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.

PROGRAM	SEMESTER	CODE	COURSE
B.SC I BZC	**II**	**BOT 02**	**Basics of Vascular plants and Phyto geography**

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

CO1: Demonstrate the techniques of section cutting, preparing slides, identifying of the material and drawing exact figures.

CO2: Compare and contrast the morphological, anatomical and reproductive features of vascular plants.

CO3: Identify the local angiosperms of the families prescribed to their genus and species level and prepare herbarium.

CO4: Exhibit skills of preparing slides, identifying the given twigs in the lab and drawing figures of plant twigs, flowers and floral diagrams as they are.

CO5: Prepare and preserve specimens of local wild plants using herbarium techniques.

PROGRAM	SEMESTER	CODE	COURSE
B.SC II BZC	**III**	**BOT 03**	**Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity**

On successful completion of this course, the students will be able to;

CO1: Understand on the organization of tissue sand tissue systems in plants.

CO2: illustrate and interpret various aspects of embryology.

CO3: Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.

CO4: Appraise various qualitative and quantitative parameters to study the population and community ecology.

CO5: Correlate their importance of biodiversity and consequences due to its loss.

CO6: Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.

PROGRAM	SEMESTER	CODE	COURSE
B.SC II BZC	**IV**	**BOT 04**	**Plant Physiology and Metabolism**

On successful completion of this course, the students will be able to;

CO1: comprehend the importance of water in plant life and mechanisms for transport water and solutes in plants.

CO2: Evaluate the role of minerals in plant nutrition and their deficiency symptoms.

CO3: Interpret the role of enzymes in plant metabolism.

CO4: Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.

CO5: Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.

CO6: Evaluate the physiological factors that regulate growth and development in plants.

CO7: Examine the role of light on flowering and explain physiology of plants under stress conditions.

PROGRAM	SEMESTER	CODE	COURSE
B.SC II BZC	**IV**	**BOT 05**	**Cell Biology, Genetics and Plant Breeding**

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

CO1: Distinguish prokaryotic and eukaryotic cells and design the model of a cell.

CO2: Explain the organization of a eukaryotic chromosome and the structure of genetic material.

CO3: Demonstrate techniques to observe the cell and its components under a microscope.

CO4: Discuss the basics of Mundelein genetics, its variations and interpret inheritance of traits in living beings.

CO5: Elucidate the role of extra-chromosomal genetic material for inheritance of characters.

CO6: Evaluate the structure, function and regulation of genetic material.

CO7: Understand the application of principles and modern techniques in plant breeding.

CO8: Explain the procedures of selection and hybridization for improvement of crops.

PROGRAM	SEMESTER	CODE	COURSE
B.SC III BZC	**V**	**BOT 6C**	**PLANT TISSUE CULTURE**

Students at the successful completion of the course will be able to:

CO1: Comprehend the basic knowledge and application of plant tissue culture.
CO2: Identify various facilities required to set up a plant tissue culture laboratory.
CO3: Acquire a critical knowledge on sterilization technique related to plant tissue culture.
CO4: Demonstrate skills of callus culture through hands on experience
CO5: Understand the biotransformation technique for production of secondary metabolites

PROGRAM	SEMESTER	CODE	COURSE
B.SC III BZC EM	**V**	**BOT 7C**	**Mushroom Cultivation**

Students at the successful completion of the course will be able to:

CO1: Understand the structure and life of a mushroom and discriminate edible and poisonous mushrooms.

CO2: Identify the basic infrastructure to establish a mushroom culture unit.

CO3: Demonstrate skills preparation of compost and spawn

CO4: Acquire a critical knowledge on cultivation of some edible mushrooms.

CO5: Explain the methods of storage, preparation of value –added products and marketing

Department of Zoology

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	I	ZOO - 01	**ANIMAL DIVERSITY – BIOLOGY OF NONCHORDATES**

Course Outcomes: By the completion of the course the graduate should able to –

CO1 Describe general taxonomic rules on animal classification

CO2 Classify Protozoa toCoelenterata with taxonomic keys

CO3 Classify Phylum Platy hemninthes to Annelida phylum using examples from parasitic adaptation and vermin composting

CO4 Describe Phylum Arthropoda to Mollusca using examples and importance of insects and Molluscans

CO5 Describe Echinodermata to Hemi chordata with suitable examples and larval stages in relation to the phylogeny

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	II	ZOO - 02	**ANIMAL DIVERSITY – BIOLOGY OF CHORDATES**

Course Outcomes:

By the completion of the course the graduate should able to -

CO1 Describe general taxonomic rules on animal classification of chordates

CO2 Classify Protochordata to Mammalia with taxonomic keys

CO3 Understand Mammals with specific structural adaptaions

CO4 Understand the significance of dentition and evolutionary significance

CO5 Understand the origin and evolutionary relationship of different phyla from Prochordata to mammalia.

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	III	ZOO - 03	**CELL BIOLOGY, GENETICS, MOLECULAR BIOLOGY AND EVOLUTION**

Course Outcomes:

The overall course outcome is that the student shall develop deeper understanding of what life is and how it functions at cellular level. This course will provide students with a deep knowledge in Cell Biology, Animal Biotechnology and Evolution and by the completion of the course the graduate shall able to –

CO1 To understand the basic unit of the living organisms and to differentiate the organisms by their cell structure.

CO2 Describe fine structure and function of plasma membrane and different cell organelles of eukaryotic cell.

CO3 To understandthe history of origin of branch of genetics, gain knowledge on heredity, interaction of genes, various types of inheritance patterns existing in animals

CO4 Acquiring in-depth knowledge on various of aspects of genetics involved in sex determination, human karyotyping and mutations of chromosomes resulting in various disorders

CO5 Understand the central dogma of molecular biology and flow of genetic information from DNA to proteins.

CO6 Understand the principles and forces of evolution of life on earth, the process of evolution of new species and apply the same to develop new and advanced varieties of animals for the benefit of the society

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	IV	ZOO - 04	**ANIMAL PHYSIOLOGY, CELLULAR METABOLISM AND EMBRYOLOGY**

Course Outcomes:

This course will provide students with a deep knowledge in Physiology, Cellular metabolism and Molecular Biology and by the completion of the course the graduate shall able to –

CO1 Understand the functions of important animal physiological systems including digestion, cardio-respiratory and renal systems.

CO2 Understand the muscular system and the neuro-endocrine regulation of animal growth, development and metabolism with a special knowledge of hormonal control of human reproduction.

CO3 Describe the structure, classification and chemistry of biomolecules and enzymes responsible for sustenance of life in living organisms

CO4 Develop broadunderstanding the basic metabolic activities pertaining to the catabolism and anabolism of various biomolecules

CO5 Describe the key events in early embryonic development starting from the formation of gametes upto gastrulation and formation of primary germ layers.

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	IV	ZOO - 05	**IMMUNOLOGY AND ANIMAL BIOTECHNOLOGY**

Course Outcomes:

This course will provide students with a deep knowledge in immunology, genetics, embryology and ecology and by the completion of the course the graduate shall able to –

CO1 To get knowledge of the organs of Immune system, types of immunity, cells and organs of immunity.

CO2 To describe immunological response as to how it is triggered (antigens) and regulated (antibodies)

CO3 Understand the applications of Biotechnology in the fields of industry and agriculture including animal cell/tissue culture, stem cell technology and genetic engineering.

CO4 Get familiar with the tools and techniques of animal biotechnology.

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	V	ZOO – 06B	**LIVESTOCK MANAGEMENT-I (BIOLOGY OF DAIRY ANIMALS)**

Course Outcomes:

CO1 Students at the successful completion of the course will be able to

CO2 Select the suitable breeds of livestock for rearing

CO3 Relate the anatomy of udder with letdown of milk

CO4 Identify and manipulate the reproductive behavior of cattle

CO5 Inspect the economics of dairy farming

CO6 Apprise the various breeding techniques employed in livestock

PROGRAM	SEMESTER	CODE	COURSE
B.SC : BZC & CZCA	V	ZOO – 07B	: **LIVE STOCK MANAGEMENT - II (DAIRY PRODUCTION ANDMANAGEMENT**)

Students at the successful completion of the course will be able to

CO1 Identify and suggest the suitable housing system for the dairy farming

CO2 Understand management practices for the dairy farming

CO3 Learn the process of milk pasteurization

CO4 Prepare cream from milk

Department of Computer Science

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	I	C1	PROBLEM SOLVING IN C

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

CO 1: Understand the evolution and functionality of a Digital Computer.

CO 2: Apply logical skills to analyze a given problem

CO 3: Develop an algorithm for solving a given problem.

CO 4: Understand 'C' language constructs like Iterative statements, Array Processing,Pointers, etc.

CO 5: Apply 'C' language constructs to the algorithms to write a 'C' language program.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	II	C2	DATA STRUCTURES USING C

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

CO 1: Understand available Data Structures for data storage and processing.
CO 2: Comprehend Data Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph
CO 3: Choose a suitable Data Structures for an application
CO 4: Develop ability to implement different Sorting and Search methods
CO 5: Have knowledge on Data Structures basic operations like insert, delete, search, update and traversal
CO 6: Design and develop programs using various data structures
CO 7: Implement the applications of algorithms for sorting, pattern matching etc

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	III	C3	DATABASE MANAGEMENT SYSTEMS

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

CO 1: Gain knowledge of Database and DBMS.

CO 2: Understand the fundamental concepts of DBMS with special emphasis on relational data model.

CO 3: Demonstrate an understanding of normalization theory and apply such knowledgeto the normalization of a database

CO 4: Model database using ER Diagrams and design database schemas based on the model.

CO 5: Create a small database using SQL.

CO 6: Store, Retrieve data in database.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	IV	C4	OOP'S THROUGH JAVA

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

CO 1: Understand the benefits of a well-structured program
CO 2: Understand different computer programming paradigms
CO 3: Understand underlying principles of Object-Oriented Programming in Java
CO 4: Develop problem-solving and programming skills using OOP concepts
CO 5: Develop the ability to solve real-world problems through software development inhigh-level programming language like Java

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	IV	C5	OPERATING SYSTEMS

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

CO 1: Know Computer system resources and the role of operating system in resourcemanagement with algorithms

CO 2: Understand Operating System Architectural design and its services.

CO 3: Gain knowledge of various types of operating systems including Unix and Android.

CO 4: Understand various process management concepts including scheduling,synchronization, and deadlocks.

CO 5: Have a basic knowledge about multithreading.

CO 6: Comprehend different approaches for memory management.

CO 7: Understand and identify potential threats to operating systems and the securityfeatures design to guard against them.

CO 8: Specify objectives of modern operating systems and describe how operating systemshave evolved over time.

CO 9: Describe the functions of a contemporary operating system

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	V	C6	DATA SCIENCE

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

CO 1: Develop relevant programming abilities.
CO 2: Demonstrate proficiency with statistical analysis of data.
CO 3: Develop the ability to build and assess data-based models.
CO 4: Demonstrate skill in data management.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	V	C7	PYTHON FOR DATA SCIENCE

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

CO 1: Identify the need for data science and solve basic problems using Python built-in data types and their methods.
CO 2: Design an application with user-defined modules and packages using OOP concept
CO 3:.Employ efficient storage and data operations using NumPy arrays..
CO 4: Apply powerful data manipulations using Pandas..
CO 5: Do data pre-processing and visualization using Pandas

Department of Computer Science

PROGRAM	SEMESTER	CODE	COURSE
B.COM	I	C1	INFORMATION TECHNOLOGY

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

CO 1: Describe the fundamental hardware components that make up a computer's hardware and the role of each of these components

CO 2: understand the difference between an operating system and an application program, and what each is used for in a computer

CO 3: Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems

CO 4: Apply standard statistical inference procedures to draw conclusions from data Interpret, produce, and present work-related documents and information effectively and accurately

CO 5: Analyze compression techniques and file formats to determine effective ways of securing, managing, and transferring data

CO 6: Identify and analyze computer hardware, software

PROGRAM	SEMESTER	CODE	COURSE

B.COM	II	C2	E-COMMERCE& WEB DESIGNING

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

CO 1: Understand the foundations and importance of E-commerce

CO 2: Describe the infrastructure for E-commerce

CO 3: Discuss legal issues and privacy in E-Commerce

CO 4: Understand the principles of creating an effective web page, including an in-depth consideration of information architecture

CO 5: Analyze the impact of E-commerce on business models and strategy

CO 6: Assess electronic payment systems

CO 7: Exploring a web development framework as an implementation example and create dynamically generated web site complete with user accounts, page level security, modular design using css

PROGRAM	SEMESTER	CODE	COURSE
B.COM	III	C3	PROGRAM WITH C&C++

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

CO 1: Develop programming skills

CO 2: learn the syntax and semantics of programming language

CO 3: Understanding a functional hierarchical code organization

CO 4: Write program on a computer, edit, compile, debug, correct, recompile and run it

CO 5: Evaluate comparisons and limitations of the various programming constructs and choose correct one for the task in hand.

PROGRAM	SEMESTER	CODE	COURSE
B.COM	IV	C4	OOP'S WITH JAVA

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

CO 1: Gain knowledge of Database and DBMS.

CO 2: Understand the fundamental concepts of DBMS with special emphasis onrelational data model.

CO 3: Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database

CO 4: Model database using ER Diagrams and design database schemas based on themodel.

CO 5: Create a small database using SQL.

CO 6: Store, Retrieve data in database.

CO 7: Perform PL/SQL programming using concept of Cursor Management, Error Handling, Packages

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPCS & MSCS	IV	C5	DATABASE MANAGEMENT SYSTEMS

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

CO 1: Understand the concept and underlying principles of Object-Oriented Programming

CO 2: Understand how object-oriented concepts are incorporated into the Java programming language.

CO 3: Implement Object Oriented Programming Concepts (class, constructor, overloading, inheritance, overriding) in java.

CO 4: Create and use interfaces in a Java.

CO 5: Exception handling in Java Threads.

PROGRAM	SEMESTER	CODE	COURSE
B.COM	V	C6	BIG DATA ANALYTICS USING R

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

CO 1: Understand data and classification of digital data.

CO 2: Understand Big Data Analytics.

CO 3: Load data in to R.

CO 4: Organize data in the form of R objects and manipulate them as needed.

CO 5: Perform analytics using R programming.

PROGRAM	SEMESTER	CODE	COURSE
B.COM	V	C7	DATA SCIENCE USING PYTHON

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

CO 1: Understand basic concepts of data science

CO 2: Understand why python is a useful scripting language for developers.

CO 3: Use standard programming constructs like selection and repetition.

CO 4: Use aggregated data (list, tuple, and dictionary).

CO 5: Implement functions and modules

Department of Computer Science

PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	I	C1	COMPUTER FUNDAMENTALS AND OFFICE TOOLS

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

CO 1: To learn about Basics of Computers

CO 2: To learn about basics of Hardware Components

CO 3: To learn about basics of Operating System Software

CO 4: To learn about basics of Application System Software

CO 5: To practice handful exercises on Documentation, Spreadsheet, and Presentation

. PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	II	C2	PROGRAMMING IN C

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

CO 1: Analyze a given problem and develop an algorithm to solve the problem.

CO 2: Understand tokens and control structures in C.

CO 3: Understand arrays and strings and implement them.

CO 4: Understand the right way of using functions, pointers, structures and unions in C

CO 5: Develop and test programs written in C

PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	III	C3	DATABASE MANAGEMENT SYSTEMS

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

CO 1: Gain knowledge of Database and DBMS.

CO 2: Understand the fundamental concepts of DBMS with special emphasis on relational data model.

CO 3: Demonstrate and understanding of normalization theory and apply such knowledge to the normalization of a database

CO 4: Model database using ER-Diagrams and design database schemas based on the model.

CO 5: Create a small database using SQL

PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	IV	C4	OOP'S USING JAVA

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

CO 1: Understand the concept and underlying principles of Object-Oriented Programming

CO 2: Understand how object-oriented concepts are incorporated into the Java programming language.

CO 3: Implement Object Oriented Programming Concepts (class, constructor, overloading, inheritance, overriding) in java.

CO 4: Create and use interfaces in a Java.

CO 5: Implement Multithreading, exception handling in Java.

CO 6: Create and use packages and applets

PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	IV	C5	WEB DESIGNING

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

CO 1: To learn about Basic tags in Html and CSS

CO 2: To learn about the Building Blocks of php, functions.

CO 3: To learn about Different types of Arrays.

CO 4: To learn about working with Forms, Sessions, Cookies.

CO 5: To learn about Interacting with MySQL using PHP.

PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	V	C6	BIG DATA ANALYTICS USING R

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

CO 1: Understand data and classification of digital data.

CO 2: Understand Big Data Analytics.

CO 3: Load data in to R.

CO 4: Organize data in the form of R objects and manipulate them as needed.

CO 5: Perform analytics using R programming.

PROGRAM	SEMESTER	CODE	COURSE
B.SC & BA CZCA & HPCA	V	C7	DATA SCIENCE USING PYTHON

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

CO 1: Understand basic concepts of data science

CO 2: Understand why python is a useful scripting language for developers.

CO 3: Use standard programming constructs like selection and repetition.

CO 4: Use aggregated data (list, tuple, and dictionary).

CO 5: Implement functions and modules

Department of Statistics

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS & MSCS	I	STAT 01	Descriptive Statistics

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

CO 1: Knowledge of Statistics and its scope and importance in various areas such as Medical, Engineering, Agricultural and Social Sciences etc.

CO 2: Knowledge of various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc.

CO 3: Knowledge of other types of data reflecting quality characteristics including concepts of independence and association between two attributes.

CO 4: Insights into preliminary exploration of different types of data.

CO 5: Knowledge of correlation, regression analysis, regression diagnostics, partial and multiple correlations.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS, MSCS	II	STAT 02	Probability Theory and Distributions

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

CO 1: Ability to distinguish between random and non-random experiments.

CO 2: Knowledge to conceptualize the probabilities of events including frequentist and axiomatic approach. Simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem.

CO 3: Knowledge related to concept of discrete and continuous random variables and their probability distributions including expectation and moments.

CO 4: Knowledge of important discrete and continuous distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hyper-geometric, normal, uniform, exponential, beta and gamma distributions.

CO 5: Acumen to apply standard discrete and continuous probability distributions to different situations.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS, MSPCS	III	STAT 03	Statistical Inference

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

CO 1: Concept of law large numbers and their uses.

CO 2: Concept of central limit theorem and its uses in statistics.

CO 3: Concept of random sample from a distribution, sampling distribution of a statistic, standard error of important estimates such as mean and proportions.

CO 4: Knowledge about important inferential aspects such as point estimation, test of hypotheses and associated concepts.

CO 5: Knowledge about inferences from Binomial, Poisson and Normal distributions as illustrations.

CO 6: Concept about non-parametric method and some important non-parametric tests.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS, MSCS	IV	STAT 04	Sampling Techniques and Designs of Experiments

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

CO 1: Introduce the various statistical sampling schemes such as simple, stratified and systematic sampling.

CO 2: An idea of conducting the sample surveys and selecting appropriate sampling techniques.

CO 3: Knowledge about comparing various sampling techniques.

CO 4: Carry out one way and two way Analysis of Variance.

CO 5: Understand the basic terms used in design of experiments.

CO 6: Use appropriate experimental designs to analyze the experimental data.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS, MSCS	IV	STAT 05	Applied Statistics

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

CO 1: Time series data, its applications to various fields and components of time series.

CO 2: Fitting and plotting of various growth curves such as modified exponential, Gompertz and logistic curve.

CO 3: Fitting of trend by Moving Average method.

CO 4: Measurement of Seasonal Indices by Ratio-to-Trend , Ratio-to-Moving Average and Link Relative methods.

CO 5: Applications to real data by means of laboratory assignments.

CO 6: Interpret and use a range of index numbers commonly used in the business sector.

CO 7: Perform calculations involving simple and weighted index numbers.

CO 8: Understand the basic structure of the consumer price index and perform calculations involving its use.

CO 9: Various data collection methods enabling to have a better insight in policy making, planning and systematic implementation.

CO 10: Construction and implementation of life tables.

CO 11: Population growth curves, population estimates and projections.

CO 12: Real data implementation of various demographic concepts as outlined above through practical assignments.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS, MSCS	V	STAT 06A	Operations Research - I

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

CO 1: Know the scope of Operations Research.

CO 2: Link the OR techniques with business environment and life sciences.

CO 3: Convert real life problems into mathematical models.

CO 4: Find a solution to the problem in different cases.

CO 5: Inculcate logical thinking to find a solution to the problem.

PROGRAM	SEMESTER	CODE	COURSE
B.SC MPS, MSCS	V	STAT 07A	Operations Research - II

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

CO 1: Solve the problems in logistics.

CO 2: Find a solution for the problems having space constraints.

CO 3: Minimize the total elapsed time in an industry by efficient allocation of jobs to the suitable persons.

CO 4: Find a solution for an adequate usage of human resources.

CO 5: Find the most plausible solutions n industries and agriculture when a random environment exists.

DEPARTMENT OF HISTORY

CO 1: To understand the great history, tradition and culture of India from earliest times to 600 A.D. The students can gain the knowledge by learning the sources of history, introducing a systematic administration through the Indus civilization. It explain about religious and social conditions during Pre- Vedic and Later Vedic period. The students can learn a great social, religious, Art and culture of Gupta's period during 3rd century B.C.

CO 2: The students can obtain the knowledge about various dynasties who ruled south India like Sangama, Pallava, chola, chaalukyas, and Vjaya Nagara empires. It provide such knowledge to the Students to know the age of Sultanate administration. And also can learn the impact of Islam on Indian society, and culture through the Bhakti and Sufi Movements. It explain about the emergence of composition culture and politicalhistory and social conditions of Kakatiyas.

CO 3: The students can understand about the emergence of Mughal Empire from 1526 to 1707 and Invasion of Babur, political, economic, cultural developments and down fall of the mughals. Students can also obtain the knowledge about introducing economic policies during British from 1757-1857, and Land revenue settlements, commercialization of Agriculture system.

CO 4: The students can understand the emergence of Social, Religious and self Respect Movement. Development of cultural awakening and growth of Brahma Samaj and Aarya Samaj. Students can also obtain the knowledge of growth of Nationalism, impact of British colonial policies and Freedom Struggle Movement from 1885-1920.

CO 5: Students can understand about Feudalism, Advent of Portugals to India, and also known about the growth of Renaissance Movement and Emergence of National Statesin Modern Europe. It provides such Knowledge to students such as Age of Revolutions like American Revolution, French Revolutions and its causes, Teachings of Philosophers in the Revolution times.

CO 6: The students can understand about the history of Andhra Desha especially Kakatiyas, Reddy Rajulu Students can gain the knowledge about the Vijayanagara Kingdom, Qutub Shahis of Golkonda in South India.

CO 7: The students can easily understand about the History of Modern Europe. Emerging of new states after I and II World Wars.

CO 8: The Students can understand about the cultural tourism and development in Andhra particularly History and tourism of A.P, Planning and its developments. It also provides the knowledge of various social and Self Respect movements in Andhra and also Freedom Movements in Andhra (1885-1920) Students can learn easily Socio- Economic changes in A.P, Growth of Leftist Ideology, Dalit – Movements , Jai Telangana Movements. It also provides knowledge about

Bifurcation of Andhra Pradesh, particularly Movement for separate Telangana & united Andhra Pradesh- and Formation of Telangana State (2014).

DEPARTMENT OF ECONOMICS

CO1: Understand the links between house hold behavior and economic models of demand

CO2: Understand how different degrees of competition in a market, the effect of pricing andout put

CO3: Understand why house hold business, government and global behavior determine theaggregate demand for goods and services

CO4: Able to understand how the monetary and fiscal policy effects the financial system

CO5: Understand the role of agriculture industry and trade in the development process of the less developed countries

CO6: Understand and replicate the connections between diagrammatic models and their underlying formula mathematical structures using algebra and calculus.

CO7: The foundation to make the **s**tudents communicate effectively, both written and orally, advanced economic concepts and apply those to agricultural and natural resource issues and apply those in a professional or academic environment.

CO8: Students are made to evaluate effectively the impact of trade policy, common markets, trading blocks, market instability, commodity problems, trade agreements and environmental regulations on imports and exports in international trade to be able to improve production and decision making

DEPARTMENT OF POLITICS

CO1:The students understand the nature and scope of political science. And the students can learn about concepts of state, ways of approaches to politics, and the concepts of Nation and Nationalism, Rights, Freedom and Citizenship.

CO2: It helps the students learn basic concepts, theories of politics, purpose of Constitution of law. Through this subject students can learn various forms of Governments, concept of Democracy and how judicial system works in democratic states like India.

CO3: To Understand about the making of constitution, what impact Freedom movement has on making of constitution, and also learn the features of the constitution, Preamble, Fundamental Rights, Federal System in India.

CO4: The students can obtain the knowledge by knowing the political process in India. And Students can understand religions, politics, and how the party system works

in India.

CO5: Students can understand the political and social views of various political philosophers from ancient period to modern age particularly from Kautilya to Manu and Raja Ram Mohan Ray to Mahatma Gandhi and Ambedkar.

CO6: Students can learn about the political views of western philosophers by studying their theories. And the students can analyze the theories of Ideal State of Plato and Aristotle, and the state craft theory in between Kautilya to Machiavelli.

CO7: The students can understand the principles of Administration by learning the Concepts of Hierarchy, Co- Ordination, Decision Making, and Structure of Organization. It develops knowledge among the students how the system of Admin can run through the various Departments.

CO8: Students can understand about what steps can be taken by India to maintain International Relations among the world countries, and Foreign Policy System. And Students also can get the awareness about Contemporary Global Issues.

Loyola Degree College (YSRR)

(A Christian Minority Institution)

Pulivendula – 516390, YSR Kadapa District, Andhrapradesh

Programme Outcomes

Programme Specific Outcomes for B.Sc

PSO1: To explore Evolution and functionality of Digital computers. Apply logical skills to analyze a given problem.

PSO2: Fundamental concept of data structures and to emphasize the importance of data structures in developing and implementing efficient algorithms.

PSO3: Design & develop database for large volumes & varieties of data with optimized data processing techniques.

PSO4: Develop problem-solving and programming skills using OOP concepts. Develop the ability to solve real-world problems through software development inhigh-level programming language like Java.

PSO5: Know Computer system resources and the role of operating system in resource management with algorithms. Understand Operating System Architectural design and its services.

PSO6: Student can join Botany related or life Science related private firms.

PSO7: Can join agriculture seed companies, tissue culture labs, pharma companies, etc.

PSO8: Can work as an environmental consultant in various agencies.

PSO9: Develop inclination towards Environmental consultants.

PSO10: Student can start their venture in Nursery for development of various plant variety plantlets like citrus , mango, pomegranate, etc.

PSO11: B.Sc. Chemistry provides backbone in all the traditional branches of Physical, Inorganic, organic and Analytical chemistry.

PSO12: The experimental work will be continues throughout the session to develop the theoretical knowledge and practical as well.

PSO13: Graduates from this course will be better prepared to understand the new environment friendly systems and can understand the processes that the chemical industry is adopting.

PSO14: The course has been designed to have insight in almost all the aspects of chemistry and to build a solid foundation in the subject to choose a career in industry or academics or research.

PSO15: The syllabus very well designed and it covers the areas like water chemistry, consumer products-soaps, detergents, shampoos, skin preparations, polymer chemistry, drugs, industrially important chemicals used in Industry.

PSO16: In banking sector students can get in to with mathematics.

PSO17: They can prepare for MPSC and UPSC exam.

PSO18: Mathematics graduate can work as finance and investment analyst and advisorand chartered or certified accountant.

PSO19: A career in teaching offers unparalleled job satisfaction.

PSO20: Physics graduate can find ample career openings both in public as well as private sector enterprises; also can apply for all government jobs as graduation is the basic qualification.

PSO21: One can find various opportunities in governmental organizations like DRDO, VSSC, ISRO, SSPL, BARC, etc.

PSO22: They are also recruited in space research centers and in research laboratories.

PSO23: There are some of the common job types like, Lab Supervisor, Technician, Teachers, Manager, and Radiation Oncologist.

PSO24: Students become well versed regarding basic concepts of modern biology,field survey work and social extension program and their applications in real life.

PSO25: Students acquire knowledge of zoology; it broadens their outlook towards importance of field survey work in identifying and classifying and distribution of animals.

PSO26: It provides students a launch-pad to enroll themselves for post graduate studyin systematic and taxonomy.

PSO27: Practical work make the students skillful, this skill will help them to design outdoor activities involving local citizens in conserving biodiversity in their daily life.

PSO28: Various activities like field survey and photography project develop their hidden talent, make their mind face to think and act. Science exhibition, poster competition, short trip help in shaping their personality and do innovations which will be beneficial for the country.

PSO29: Competency in reading, writing, listening and writing at professional level.

PSO30: Ability to prepare CV, advertisement writing, brief re Program Outcomes writing.

PSO31: Understand the structure and function of grammatical units.

PSO32: Know the use of language at semantic and syntactic levels.

PSO33: Developed skill in electronic communication as well.

Programme Specific Outcomes for B.A

PSO1: Students will be able to possess a broad, liberal arts foundation and an understanding of how developments in social and intellectual history shape and affect human values and institutions.

PSO2: Students will get an idea of the range of methods by which the social sciences study individuals, cultures and societies.

PSO3: Students will be able to analyze human behavior, problems or situations from social science, cross-cultural and global perspectives.

PSO4: Students will be able to evaluate how theories and models within the social sciences have been established and maintained through systems of power and oppression.

PSO5: Help the students to apply analytical skills to social phenomena in order to understand human behavior.

PSO6: Enable the students to apply knowledge and skills to contemporary problems and issues.

PSO7: History will alter the perspective of the students regarding cultural, social, political issues which can triangle then in particular point of view.

PSO8: Students will produce their own historical analysis of documents and develop theability to think critically and historically when discussing the past.

PSO9: Students should understand academic honesty, a concept presented to them in all history classes

PSO10: Students should understand the value of diversity.

PSO11: Students should understand the basic tools of historical analysis.

PSO12: Students will produce their own Political analysis of documents and develop the ability to think critically and political issues discussing the present.

PSO13: To understand the existing political situation of the country and the world.

PSO14: The student will have complete understanding of various constitutionalprocedures.

PSO15: Political Science will alter the perspective of the students regarding cultural,social, political issues.

Programme Specific Outcomes for B.Com

PSO1: Basic knowledge of trade, commerce and industry

PSO2: knowledge of banking, marketing management, finance management economic status and challenges and legal framework of corporate world .

PSO3: practical knowledge of industry working through different accounting software in Financial accounting.

PSO4: knowledge of current challenges of the economy awareness of business environment, marketing management, knowledge of computerized accounting system, business mathematics.

PSO5: Enable learners to prove themselves in different professional examinations like CA, CS, CAT, CMA, UPSC, M.COM.

PSO6: Enable students to demonstrate progressive learning of various tax issues and tax forms related to individuals and businessmen and setting up their own business start up.

PSO7: Develop professional skill among students and build a strong foundation in accounts, Finance and ethics which will benefit themselves as well as the society.

PSO8: Students get opportunities to explore many career paths like investment and portfolio Management, stockmarket, security analysis, mutual fund and capital market analysis, accounting field, financial field etc.

PSO9: B.com in banking and insurance is developed as per the requirement of the banking and Finance industry where student learn banking operations, regulations, monetary auditing Selling of financial products and services.

POS10: Solve problem related to employer, employee, investors and consumers with legal Protection.

PSO11: Prepare financial statement of business using accounting principles, concepts, Conventions and provisions

PS012: Implement traditional and modern strategies and practices of costing, banking, Economics, Marketing, management, auditing and taxation. Practice different techniques of communication and apply it in business and profession

Programme Specific Outcomes for BBA

PSO1: To pursue a post-graduation either in business management, commerce, economics or English.

PSO2: TO understand discipline like accounting, financing, management, business laws.

PSO3: To work as junior level management positions in banking industry or insurance companies as an office assistant, accounts executive in an organization.

PSO4: To build careers in corporate sectors pursue MBA, MFC and other professional courses to become professionals, researchers, consultants and teachers with core competencies and Skills.

PSO5: Demonstrate ability to work in groups ,teams and in other participations.

PSO6: Demonstrate understanding of social cues and contexts in social interactions

PSO7: Demonstrate the ability to create business plans, start-up, business events etc..

PSO8: Ability to analyze various functional issues affecting the organization.

PSO9: Ability to do internships and projects with the help of decision making and business tools.

T AMALA AROKIYA RAJ

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