SGK GOVERNMENT DEGREE COLLEGE, VINUKONDA

PROGRAMME OUTCOMES

PO1	Scientific temper will be developed in Students.
PO2	Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the science stream.
PO3	Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship
PO4	Students will possess basic subject knowledge required for higher studies, professional And applied courses like Actuaries, Management Studies, Law etc
PO5	Students will be aware of and able to develop solution oriented approach towards Various Social and Environmental issues

DEPARTMENT OF MATHEMATICS

PROGRAMME SPECIFIC OUTCOMES

PSO1	A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations , terminology
PSO2	A student should get adequate exposure to global and local concerns that explore them many aspects of mathematical sciences
PSO3	Student is equipped with mathematical modeling ability, problem solving skills, creative talent and power of communication necessary for various kinds of Employment
PSO4	Student should be able to apply their skills and knowledge that is translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
PSO5	Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study

COURSE OUTCOMES

Course : Semester I - Ordinary Differential Equations

CO1: To learn methods to solve linear differential equation with constant and variable coefficients.
CO2: To learn methods for solving non-homogenous differential equation.
CO3: To learn method of variation of parameter to solve linear differential equations.
CO4: To solve first order and higher degree differential equations.
CO5: To solve orthogonal trajectories

Course: Semester II – 3D Geometry

CO1: To learn methods of finding various equations of planes and properties and get the knowledge of planes.
CO2. To learn basic idea of lines, sphere and cones.
CO3. To understand the properties of planes, lines, spheres and cones.
CO4. To express the problems geometrically and then to get the solution.

Course : Semester III - Group Theory

CO1: To learn fundamental properties and mathematical tools such as closure, identity, inverse and generators.

CO2: To study algebraic structure 'Groups' in detail which is useful in study of Rings, Modules, Algebraic topology, Analysis

CO3: To enhance abstract thinking of students.

CO4: To learn to compare two different algebraic structures and study transfer of properties in- between these structures through homomorphism and isomorphism.

Course: Semester IV - Real Analysis

CO1: To learn basic techniques and examples in analysis to be well prepared for courses like Topology, Measure theory and Functional analysis.

CO2: To study various types of sets and relations, and concept of countable and uncountable..

CO3: To study notion of lub and glb which helps to learn integrations which helps to find area under any functions.

CO4: To apply notion of derivative in mean value theorem and also in higher order derivatives which arise in all applied sciences

CO5 To study concept of sequence and series and hence find sum of infinite terms with Different Methods.

CO6 To study theory and applications of Rolle's theorem, Cauchy mean value theorem and Lagrange's mean value theorem and Taylor series.

CO7 To learn Riemann Integral and its properties in detail, leading to fundamental theorem of calculus and Mean value theorems.

CO8: To study different tests for solving improper integrals of first and second kind.

CO9: To study pointwise and uniform convergence of sequences and series of functions.

Course: Sem V - Linear Algebra

CO1: To learn the importance of vector spaces, basis and dimension and linear transformation in Physics, Engineering, Social sciences and various branches of Mathematics.

CO2: To learn to find Eigen values and Eigen vectors of a matrix which is used in the study of vibrations, chemical reactions and geometry.

CO3: To learn Inner Product spaces and Gram-Schmidt process of orthogonalization. CO4: To get well equipped with Mathematical Modelling abilities.

Course : Semester V - Ring Theory

CO1: To study the algebraic structure Ring in detail through various examples. CO2: To learn the construction of field of quotients of an integral domain. CO3: To study the Rings of polynomials and its factorization over a field.

CO4: To study the notion of ideals and factor rings with examples.

CO5: To study Unique Factorization domain, Euclidean Domain and related results

Course : Semester V - Vector Calculus

CO1: Learn conceptual variations while advancing from one variable to several variables in calculus.

CO2: Vector differentiation and problems.

CO3: Inter-relationship amongst the line integral, double and triple integral formulations.

CO4: Applications of multivariable calculus tools and importance of Green, Gauss and Stokes' theorems in other branches of mathematics.

Course: Semester VI - Numerical Analysis

CO1: To learn to apply the various numerical techniques for solving real life problems.

CO2: The problems which cannot be solved by usual formulae and methods can be Solved approximately by using numerical techniques.

CO3: To fit curve to the data by using 5 different methods of interpolation as well as extrapolation.
CO4: To find approximate solutions to difficult differential equations occurring in engineering sciences.

Course: Semester – VI Project

CO1: Problem solving skills of students are enhanced.
CO2: Theoretical concepts are strengthened by solving maximum no. of problems
CO3: Due to one to one interaction with the teacher doubts of the students get cleared if any.
CO4 : Students learn how to apply mathematical concepts to practical and real life problems.
CO5: Interdisciplinary approach is developed.

Course: Semester VI – Laplace Transforms

CO1: To learn the evaluation of Laplace transform of different types of functions, their derivatives and integrations.
CO2: To learn the evaluation of Inverse Laplace transform of functions, their derivatives and integrations, and to learn application of Convolution theorem.
CO3: To learn to apply Laplace Transform to solve Ordinary Differential equations with constant coefficients.
CO4: To learn to evaluate the Fourier series of various even and odd functions

Course: Semester VI – Integral Transforms

CO1: Know about piecewise continuous functions, Dirac delta function, Laplace transforms and its properties. CO2: Solve ordinary differential equations using Laplace transforms.
CO3: Familiarise with Fourier transforms of functions, relation between Laplace and Fourier transforms.
CO4: Explain Parseval's identity and applications of Fourier transforms to boundary value problems.
CO5: Learn Fourier series, Bessel's inequality, term by term differentiation and integration of Fourier series.

Course: Semester VI – Advanced Numerical Analysis

CO1: To learn Least Square procedures of fitting to straight line, power function, parabola and exponential function.
CO2: To study concepts of numerical differentiation and working knowledge of problems with difference operators.
CO3: To learn notions of numerical integration and various methods of numerical integration
CO4: To solve system of linear equations by adopting numerical methods Gauss elimination, Gauss Jordan and LU decomposition methods.
CO5: To solve differential equations which can't be solved analytically by Picards, Modified Euler's, R K method.

DEPARTMENT OF PHYSICS

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015-16

PROGRAMME: THREE-YEAR B.Sc., PHYSICS

PROGRAMME STRUCTURE

First Semester Course I: Mechanics **Practical Course I** (Lab-1)	**Second Semester** Course II: , Waves and, Oscillations **Practical Course II** (Lab-2)
Third Semester Course III: Wave Optics **Practical Course III** (Lab-3)	**Fourth Semester** Course IV: Heat and Thermodynamics **Practical Course: IV** (Lab- 4)
Fifth Semester Course V: Electricity, Magnetism and Electronics Course VI: Modern Physics **Practical Courses V and VI: (**Lab-5) and (Lab-6)	**Sixth Semester** Course VII C: Elective Renewable Energy **Practical Course VII(C):** (Lab-7)

PROGRAMME OUTCOMES:

PO-1	Scientific temper would be developed among science students studying Physics in particular and studying science in general.
PO-2	Students will acquire basic technical knowledge and Practical skills along with domain knowledge of different subjects in the science stream.
PO-3	Students will become employable; they will be eligible for career opportunities in Industry or will be able to opt for entrepreneurship.
PO-4	Students will be aware of and able to develop solution oriented approach towards various scientific issues in their day to day life.

PROGRAMME SPECIFIC OUTCOMES:

PSO-1	Understand various theoretical concepts related to physical and chemical properties of materials and the role of mathematics in dealing with them in qualitative and quantitative Ways
PSO-2	Analyse the concepts of Physical and Mathematics and apply them in various situation and also in solving physics problems
PSO-3	Acquires the ability to interlink the skills and knowledge in Mathematics and Physics to develop an aptitude to address the problems in other branches of science
PSO-4	Acquires the skill needed to handle instruments and adopt lab procedures to study physical and chemical properties of materials
PSO-5	Motivate students towards higher education leading to research

I YEAR - B.Sc., PHYSICS - I SEMESTER - PAPER 1 - MECHANICS

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
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 processional 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.

I YEAR - B.SC., PHYSICS - I SEMESTER - PRACTICAL PAPER 1: MECHANICS (LAB-1)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Perform experiments on Properties of matter such as the determination of moduli of Elasticity, Surface tension of water , Coefficient of viscosity of a liquid , Moment of inertia of some regular bodies by different methods and compare the experimental values with the standard values

I YEAR - B.Sc., PHYSICS - II SEMESTER - PAPER 2 - WAVES AND OSCILLATIONS

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	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-2	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-3	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.

I YEAR - B.SC., PHYSICS - II SEMESTER - PRACTICAL PAPER 2: WAVES AND OSCILLATIONS (LAB-2)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Know how to determine the acceleration due to gravity at a place using Compound pendulum and Simple pendulum.
CO-2	Notice the difference between flat resonance and sharp resonance in case of volume resonator and sonometer experiments respectively.
CO-3	Verify the laws of transverse vibrations in a stretched string using sonometer and comment on the relation between frequency, length and tension of a stretched string under vibration.
CO-4	Demonstrate the formation of stationary waves on a string in Melde's string experiment.

II YEAR - B.Sc., PHYSICS - III SEMESTER - PAPER 3 – WAVE OPTICS

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Explain about the different aberrations in lenses and discuss the methods of minimizing them.
CO-2	Understand the phenomenon of interference of light and its formation in (i) Fresnel Biprism and (ii) Thin films, Newton's rings and Michelson interferometer
CO-3	Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating.
CO-4	Describe the construction and working of zone plate and make the comparison of zone plate with convex lens.
CO-5	Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity.
CO-6	Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.
CO-7	Understand the basic principles of fiber-optic communication and explore the field of Holography and Nonlinear optics and their applications.

II YEAR - B.SC., PHYSICS - III SEMESTER - PRACTICAL PAPER 3: WAVE OPTICS (LAB-3)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Gain hands-on experience of using various optical instruments like spectrometer, Polarimeter and making finer measurements of wavelength of light using Newton Rings experiment, diffraction grating etc.
CO-2	Understand the principle of working of polarimeter and the measurement of specific rotatory power of sugar solution
CO-3	Know the techniques involved in measuring the resolving power of telescope and dispersive power of the material of the prism.
CO-4	Be familiar with the determination of refractive index of liquid by Boy's method and the determination of thickness of a thin wire by wedge method.

II YEAR - B.Sc., PHYSICS - IV SEMESTER - PAPER 4 - HEAT AND THERMODYNAMICS

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	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.

II YEAR - B.SC., PHYSICS - IV SEMESTER - PRACTICAL PAPER 4: HEAT AND THERMODYNAMICS (LAB-4)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Perform some basic experiments in thermal Physics, viz., determinations of Stefan's constant, coefficient of thermal conductivity, variation of thermo-emf of athermocouple with temperature difference at its two junctions, calibration of a thermocouple and Specific heat of a liquid.

III YEAR - B.Sc., PHYSICS - V SEMESTER-PAPER 5 - ELECTRICITY, MAGNETISM AND ELECTRONICS

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
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,Qfactor, 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.

III YEAR - B.Sc., PHYSICS - V SEMESTER - PRACTICAL PAPER 5: ELECTRICITY, MAGNETISM AND ELECTRONICS (LAB-5)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Measure the current sensitivity and figure of merit of a moving coil galvanometer.
CO-2	Observe the resonance condition in LCR series and parallel circuit
CO-3	Learn how a sonometer can be used to determine the frequency of AC-supply.
CO-4	Observe the variation of magnetic field along the axis of a circular coil carrying current using Stewart and Gee's apparatus.
CO-5	Understand the operation of PN junction diode, Zener diode and a transistor and their V-I characteristics.
CO-6	Construct the basic logic gates, half adder and full adder and verify their truth tables. Further, the student will understand how NAND and NOR gates can be used as universal building blocks.

III YEAR - B.Sc., PHYSICS - V SEMESTER-PAPER 6 - MODERN PHYSICS

COURSE OUTCOMES:

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

III YEAR - B.Sc., PHYSICS - V SEMESTER - PRACTICAL PAPER 6: MODERN PHYSICS (LAB-6)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Measure charge of an electron and e/m value of an electron by Thomson method.
CO-2	Understand how the Planck's constant can be determined using Photocell and LEDs.
CO-3	Determine the Energy gap of a semiconductor using thermistor and junction diode.

III YEAR - B.SC., PHYSICS - VI SEMESTER-PAPER 7(C) - RENEWABLE ENERGY

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Student can understand different forms of energy other than conventional energy.
CO-2	Environmental effects – Water pollution, Depletion of Ozone layer, Global warming etc.,
CO-3	Global Energy Scenario – Energy consumption in various sections, Power generation Techniques
CO-4	Indian Energy Scenario – Energy resources available in India and Urban & Rural energy Consumption
CO-5	Solar Energy – Applications like Solar Cooker, Solar Cell and advantages.
CO-6	Wind Energy – Conservation energy principles and advantages.
CO-7	Ocean Energy – Tidal Power generation and advantages.
CO-8	Hydrogen Energy – History of Hydrogen Energy and advantages.
CO-9	Bio Energy – Energy from Biomass and conversion of Biomass into fuels and advantages.

III YEAR - B.Sc., PHYSICS - VI SEMESTER - PRACTICAL PAPER 7(C): RENEWABLE ENERGY (LAB-7)

COURSE OUTCOMES:

On successful completion of this course, the students will be able to understand	
CO-1	Performance testing of Solar Cooker
CO-2	Measurement of v-i characteristics of solar cell.
CO-3	Characteristics of Wind

DEPARTMENT OF CHEMISTRY

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015-16

PROGRAMME: THREE-YEAR BSC(MPC)

Programme Outcomes

Completion of programme the student will equip the knowledge about

1. To impart knowledge of general chemistry covering all aspects viz. inorganic,organic, physical and analytical chemistry
2. This create impact intrest in post graduate in chemistry.
3. Besides also making them aware of the recent frontier area of knowledge
4. The tools, techniques, methodologies, needed for research in chemistry.
5. To provide laboratory experience to the students by performing volumetric analysis and qualitative analysis.

Programme specific outcomes:

1. To educate students on topics : periodic classification of elements and chemical bonding.
2. To educate students on basic organic chemistry of saturated and unsaturated hydrocarbans and introduction to different types of reactions.
3. To impart knowledge on states of matter – solid,liquid and gaseous states.
4. To educate students on the topics: chemical kinetics, photo chemistry and macro molecules
5. To provide laboratory experience on selected exprimentsreleated to topics taught in theory.
6. To provide opportunity and experience of presenting seminar on pre-alloted topics related to theory.

S.No	Semester	Course Code	Course Name	**Course Outcome**	
1	1	BSC-1	Inorganic&Organic chemistry	**After the completion of the course, Students will be able to**	
				CO-1	This course gives the students idea about the chemical reactions of inorganic and organic chemistry.
				CO-2	To make student understand different organiccompounds with respect to the functional group.

				CO-3	To make student understanding the basic things for chemical reactions ie., electrophilic and nucleophilic,homolytic and hetrolytic fission
				CO-4	Describe the trends in physical and chemical properties of group 13 to 17 elements.
				CO-5	Understand the applications of various inorganic substances in different industries.
2	2	BSC–2	Physical & General chemistry	After the completion of the course, students will be able to	
				CO-1	After completion of degree students gained the theoretical as well as practical knowledge of handling chemicals
				CO-2	In majority of the daily routine things used for its surface utilisation and understanding the surface phenomena like adsorption,absorption and types of adsorption is important etc.
				CO-3	Students gained the knowledge about solid,liquid and gases
				CO-4	This course is very important for the students.This course gives student idea about the different bondings like covalent bond , ionic bond, coordination covalent bond .
				CO-5	Identify the different crystal systems and crystal structures
3	3	BSC -3	Inorganic and Organic chemistry	After the completion of the course, students will be able to	
				CO-1	Describe the trends in the physical and chemical properties of D-block elements and F-block elements..
				CO-2	Study of D-block elements is useful in determination of

					coloured complexes.
				CO-3	List the important uses of metal carbonyls used in manufacturing of various products that are used in daily life..
				CO-4	Explain the uses and importance of alcohols and carbonyl compounds in industries and in daily life.
				CO-5	The practical knowledge is very essential for the identification of various ions and elements.
4	4	BSC-4	Spectroscopy & Physical chemistry	After the completion of the course, students will be able to	
				CO-1	Spectroscopy a part in 2BSc , semester-4 syllabus is very useful in industry ,research and development work for students.
				CO-2	On learning electro chemistry the student is able to generate electric current in an electro chemical cell.This knowledge is used in the making of batteries and fuel cells
				CO-3	The student has command on dilute solutions ,colligative properties ,phase diagrams and freezing mixtures.
				CO-4	Students gained knowledge about different spectroscopes . Like nmr , electronic and IR spectroscopy
				CO-5	Understanding the applications of beer-lamberts law for colorometry experiment.
5	5	BSC-5	Inorganic,physical&organic chemistry	After the completion of the course, students will be able to	
				CO-1	Coordination compounds are found in living systems and have many uses in the home,industry and medicine.
				CO-2	Coordinaion compounds

					play many role in transport of oxygen,electron transfer agent,as a catalyst and photosynthesis process.
				CO-3	Mixed metal complexes play vital role in various biological systems and in different field of chemistry and also play active role in the field of research.
				CO-4	Nitrogen compounds play a role in medicinal chemistry and also play active role in the field of research.
				CO-5	Understand the role of internal energy, enthalpy,entropy and state and illustrate laws of thermodynamics.
6	5	BSC-6	Inorganic,organic&physical chemistry	After the completion of the course, students will be able to	
				CO-1	The more advanced chemical and biochemical aspects and methods are all developed during the course..
				CO-2	The course will provide students very fundamental task perfomed by inorganic elements in living organisms.
				CO-3	Hetro cyclic compounds are presumably the largest class of organic compounds and wide applicability in pharmacy and agro chemicals.
				CO-4	In organic chemistry carbohydrates constitute one of the most important natural products by their study of classification,structural elucidation.
				CO-5	State and illustrate laws of photo chemistry and quantam yields.
7	6	BSC-	Environmental chemistry	After the completion of the course, students will be able to	

		7(B)		**CO-1**	Demonstrate knowledge of chemical and bio chemical principals of fundamental environmental process in air water and soil.
				CO-2	Describe water purification and waste water treatment process and the practical chemistry involved.
				CO-3	Describe causes and effects of environmental pollution by energy industry.
				CO-4	Discuss local and global environmental issues based on the knowledge gained throughtout the course.
				CO-5	Reorganize different types of toxic substances and responces and analyse toxicological information.
8	6	BSC-8C1	Organic spectroscopic techniques	After the completion of the course, students will be able to	
				CO-1	Demonstrate a good understanding of the electromagenetic spectrum.
				CO-2	Describe the principals of spectroscopic methods such as NMR,IR and UV-VIS.
				CO-3	Identify the obsorption frequencies of major functional groups.
				CO-4	Make students aware of the fine structure of ESR obsorption.
				CO-5	Learn electronic spetro of di atomic molecules born-oppenheimer approximation.
9	6	BSC-8C2	Advanced organic reactions	After the completion of the course, students will be able to	
				CO-1	Identify and name important organic reactions.
				CO-2	Explain in detail the out come of organic reactions,also in terms of stereo selectivity.

				CO-3	Plan and evaluate multi step organic reaction sequences using basic retro synthetic analysis
				CO-4	Describe the principles of protecting groups like protection of alcohols and diols,carboxylic acids and amines.
				CO-5	Understand the basis of photosynthetic reactions.
10	6	BSC-8C3	Pharmaceutical and medicinal chemistry	After the completion of the course, students will be able to	
				CO-1	Defination,clssification of the drugs with examples and structures.
				CO-2	Explain the drugs used for various infections diseases caused pathogens.
				CO-3	Explain therapeutic uses of drugs and specific side effect of drug substances.
				CO-4	Describe the chemical degradeation of penicillins .
				CO-5	Explain the classification of anti malaria drugs.

DEPARTMENT OF COMPUTER APPLICATIONS
UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015-16
PROGRAMME: THREE-YEAR B.Com.,COMPUTER APPLICATIONS

PROGRAMME STRUCTURE

First Semester Course I: Computer Fundamentals and Photoshop	Second Semester Course II: Enterprise Resource Planning
Third Semester Course III: Office Automation Tools	Fourth Semester Course IV: Business Analytics
Fifth Semester Course V: Programming in C (Elective) Course VI: Database Management System (Elective) Course VII: Web Technology (Elective)	Sixth Semester Course VIII : Tally (Elective) Course IX : e-Commerce (Elective) Course X : PHP and MySQL (Elective)

PROGRAMME OUTCOMES:

PO-1	Students should possess the essential domain knowledge to conduct a business, accountancy along with problem-solving skills to build computer-based solutions for business problems.
PO-2	Students should be able to analyze and provide feasible solutions to the real-world business problems using their technical knowledge and implementation skills.
PO-3	Students should acquire the vital knowledge of programming, databases and web technology to tackle business problems effectively.
PO-4	Acquires the basic communication skills, employable skills and technical skills in addition to contemporary business knowledge to become career-ready.

PROGRAMME SPECIFIC OUTCOMES:

PSO-1	Acquire knowledge in Computer programming languages to solve essential business problems.
PSO-2	Implementing automated accounting practices and application of computer skills for effective conduct of business.

PSO-3	Acquires analytical and technical skills to analyze the business problems with ease and efficiency.
PSO-4	Propose feasible ideas and business solutions in accordance with the prevailing day-to-day problems.
PSO-5	Pursue higher education and could develop zeal to do subject-specific research.

I YEAR - B.Com (CA) - I SEMESTER
PAPER 1 - COMPUTER FUNDAMENTALS AND PHOTOSHOP

COURSE OUTCOMES:

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

CO-1	Bridge the fundamental concepts of computers with the present level of knowledge of the students.
CO-2	Acquaint with operating systems, programming languages, peripheral devices, networking, multimedia and internet.
CO-3	Gain expertise on how to use the basic tools of Adobe Photoshop to create and edit images.
CO-4	Use the skills learnt to create graphics for both the web and print media.

I YEAR - B.Com (CA) - II SEMESTER
PAPER 1 – ENTERPRISE RESOURCE PLANNING

COURSE OUTCOMES:

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

CO-1	Understand the importance of Enterprise software, and its role in integrating business functions
CO-2	Analyze the strategic options for ERP identification and adoption.
CO-3	Understand Enterprise Resource Planning architecture to effectively design ERP implementation methodologies.
CO-4	Create reengineered business processes for successful implementation of ERP.

II YEAR - B.Com (CA) - III SEMESTER
PAPER 1 - OFFICE AUTOMATION TOOLS

COURSE OUTCOMES:

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

CO-1	Understand the importance of Automation tools to prepare documents, spreadsheets, and small presentations.
CO-2	Prepare documents and project reports with ease.
CO-3	Acquire the knowledge about creation of spreadsheets embedded with formulas, macros, and to visualize the data for data analysis tasks.
CO-4	Create effective presentations to portray information for better understanding incorporating images, animations etc.

II YEAR - B.Com (CA) - IV SEMESTER
PAPER 1 - BUSINESS ANALYTICS

COURSE OUTCOMES:

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

CO-1	Understand and critically apply the concepts and methods of business analytics.
CO-2	Identify, model and solve decision problems in different settings.
CO-3	Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity.
CO-4	Create viable solutions to decision making problems.

III YEAR - B.Com (CA) - V SEMESTER
PAPER 1 - ELECTIVE - PROGRAMMING IN C

COURSE OUTCOMES:

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

CO-1	Acquire the basic knowledge on the need of programming languages and problem solving techniques.

CO-2	To develop an in-depth understanding of functional and logical concepts of C Programming.
CO-3	Able to develop the required logic and algorithms for solving business problems.
CO-4	Should possess the ability to learn any new programming language in future at ease.

III YEAR - B.Com (CA) - V SEMESTER
PAPER 2 - ELECTIVE - DATABASE MANAGEMENT SYSTEM

COURSE OUTCOMES:

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

CO-1	Understand and evaluate the role of database management systems in information technology applications within organizations.
CO-2	Design and implement properly structured databases that match the standards in-accordance with realistic constraints and conditions.
CO-3	Comprehend on how to use Structured Query Language (SQL) to define and manipulate data in a database system.
CO-4	Explain the process of Transaction management for successful implementation of business transactions.

III YEAR - B.Com (CA) - V SEMESTER
PAPER 3 - ELECTIVE - WEB TECHNOLOGY

COURSE OUTCOMES:

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

CO-1	Understand the Client-Server architecture and possess the essential knowledge to develop web applications.
CO-2	Understand and use the HTML tags to create adaptive web pages for web applications.
CO-3	Apply CSS to implement a variety of presentation effects to the web pages in a web application.
CO-4	Write client-side validations in Java Script and be able to define data for Web applications using XML.

III YEAR - B.Com (CA) – VI SEMESTER
PAPER 1 - ELECTIVE - TALLY

COURSE OUTCOMES:

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

CO-1	Understand and posses in-depth knowledge on how to computerize accounting transactions in Tally and find the financial result concern.
CO-2	To take appropriate financial decisions in a systematic manner.
CO-3	Prepare final accounts and other financial statements in Tally.
CO-4	Interpret the financial statements as well as evaluation of stock at the end.

III YEAR - B.Com (CA) - VI SEMESTER
PAPER 2 - ELECTIVE - E-COMMERCE

COURSE OUTCOMES:

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

CO-1	Understand the impact of Information and Communication Technologies and Internet for successful conduction of Business Operations.
CO-2	Acquire knowledge about various types of e-Commerce models to conduct their business online.
CO-3	Understand the importance, working and the necessity of electronic payment systems to transfer funds online in a secured manner.
CO-4	Take appropriate decisions related to e-Commerce in respect of laws, privacy and security.

III YEAR - B.Com (CA) - VI SEMESTER
PAPER 3 - ELECTIVE - PHP and MySQL

COURSE OUTCOMES:

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

CO-1	Understand the key elements of PHP, MySQL and should be able to explain the importance of PHP for web development.
CO-2	Analyze the fundamental structure of a PHP Web application and be able to create, install, compile and run a web application.

CO-3	Explain the working principle of a database, be able to develop one and know the process of using php MyAdmin to work with MySQL.
CO-4	Describe various methods of connecting to MySQL from PHP and also to connect other data sources such as SQL Server.

DEPARTMENT OF HISTORY
UNDER CBCS FRAMEWORK
PROGRAMME: THREE-YEAR B.A. HISTORY

PROGRAM SPECIFIC OUTCOMES (B.A. HISTORY)

PS01: Students will be able to demonstrate a breadth of training across historical time and space.

PS02: Students will be able to develop an in-depth understanding of a field, theme or region.

PS03: Students will be able to demonstrate an historical awareness of the diversity of the human experience across time and space (research papers)

PS04: Students will be able to apply, assess and debate the major historical schools of thought, methodology and types of sources that historians use to make original arguments (research papers)

PS05: Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose that is Minds.

PS06: Methodology – Heuristic Criticism – Synthesis – Exposition Errors of History – Objectivity in history.

COURSE OUTCOMES

PAPER-I

ANCIENT INDIAN HISTORY AND CULTURE

(FROM EARLIEST TIMES TO 600 A.D.)

1. The student understands the relations between Geography and History
2. Student can remember the life of early man through stone age culture.
3. Will be aware about the Indus Valley Civilization and Development.
4. Understands condition of 6^{th} Century B.C and formation of Jainism and Buddhism.
5. Will know about the 16 Mahajapadhas and rise of Magadha it's importance.
6. Is aware of the administrative structures and Mouryan and Dhamma Policyof Ashoka.
7. Can analyze this Socio, Economic and Cultural conditions of Satavahanas and Kushanas.
8. Will understand the Socio, Economic, cultural, Science and Technological developments in Gupta period.
9. Importance of Geography and Chronicleto the history.

PAPER-II

EARLY MEDIVAL INDIAN HISTORY AND CULTURE (600-1526 A.D.)

1. The student is able to identify the different style of architecture from Pallavas and Chalukyas overall outlook on South India.
2. Will be aware of the administrative structure of Cholas particular reference to the Village Administration.
3. Will know about the composition and function of Sultanate administrative structure of Delhi Sultanas period 1206 to 1526.
4. Comparative study for Indo Islamic Culture, heritage of religion.

PAPER-III

LATE MEDIVAL AND COLONIAL HISTORY OF INDIA

(1526-1857 A.D.)

1. The student understands Sharsha Administration & it's impact onIndian Administration to the coming generations.
2. Gains knowledge about the Marathas and their administration.
3. Understands the Administration, Economy, Society and Cultural Development under the Mughal Period Merits and Demerits.
4. Remember the policy of East India Company, their administration, How they exploit Indian economy and surprised Indian.

PAPER-IV

SOCIAL REFORM MEOVEMENT OF FREEDOM STRUGGLE

(1820-1947 A.D.)

1. Understand the cause of the revolts and peseants, tribes and sipoys in 19^{th} century.
2. Learn about Socio, Religious movement in India. With special reference to Brahma Samaj, Arya Samaj, Ramakrishna Mission.
3. Can acquire the knowledge of different stage of
   Freedom Movement i.e.
   1. 1885 – 1905
   2. 1905 – 1919
   3. 1919 – 1947
4. Can identify the nature of Gandhi Movements. How far essential to the coming generation.
5. Observe the unification of India under the Leadership of SardharVallabhai Patel after Independence.

PAPER-V

HISTORY OF MODERN WORLD (1453-1821 A.D.)

C01: Understand about the nature of Feudalism.

C02: Compare the Medieval Europe and Modern Europe with special reference to Renaissance, Reformation and Counter Reformation.

C03: Student gain knowledge about the cause and results of Americans, Revolution, Reformation & Counter Reformation.

C04: Student should know about the French revolution and teaching of Philosophers, Diderot, Voltaire, Roussesu.

PAPER-VI

HISTORY AND CULTURE OF ANDHRA DESHA

(12^{TH} – 19^{TH} CENTURY A.D.)

C01: The students understand the Social, Economic, Cultural conditions of 12^{th}& 18^{th} centuries special reference to Kakatiya & Reddy Kingdom.

C02: Understand the unification movement of Italy & Germany in Europe.

C03: The student analysis the unification movement in Europe.

C04: Student is aware of causes & results of Ward Wars 1914-1919.

PAPER-VII

HISTORY OF MODERN WORLD (19^{TH} CENTURY TO 1945 A.D.)

C01: The student compare the condition of Industrial Revolution before & after in Europe as well as in India.

C02: To understand the Unification Movement of Germany & Italy in Europe.

C03: Student can analyze the Unification Movement in Europe.

C04: Will be aware of the causes and results of World Wars.

C05: Acquire knowledge and its functions, origin and establishment.

PAPER-VIII

POPULAR MOVEMENTS IN ANDHRA DESHA (1848-1956 A.D.)

C01: The student understands the Socio, Religious movement in Andhra with special reference to KandukuriVeeresalingam.

C02: The student observes the Vandematharam movement with special reference to Kakinada conflicts.

C03: Can compare the three phases of Freedom Struggle in Andhra
1) 1885 – 1905 2) 1905 – 1919 3) 1919 – 1947.

C04: Student will be aware about the Gandhiyan period 1919 – 1947.

C05: Can analyze the separation of Andhra State and Formation of Andhra Pradesh.

PAPER-IX

CONTEMPORARY HISOTRY OF ANDHRA PRADESH

(1956-2014 A.D.)

C01: Can understand the development of Andhra in various sectors after formation of Andhra Pradesh.

C02: Will observe the cause and impact of Communist Narallbary.

C03: Aware on the early trends towards Bifurcation of Andhra Pradesh.

C04: The student can acquire the knowledge of the Bifurcation of Andhra Pradesh again and again.

PAPER-X

PROJECT WORK ON HISTORICAL ISSUES AND RELATED TOPICS

C01: The student understands the basic concepts of research work.

C02: The student identifies the various historical places in India and abroad.

C03: Practical knowledge will be implied through the project work.

C04: They learn how to collect primary and secondary data collection for project work.

C05: Could pave the future of the student as a research scholar.

DEPARTMENT OF ECONOMICS

PROGRAMME: THREE YEAR B.A ECONOMICS

PROGRAMME STRUCTURE:

Semester I - Micro Economics - Consumer Behaviour.

Semester II - Micro Economics - Production and Price Theory.

Semester III - Macro Economics - National Income, Employment and Money.

Semester IV - Banking and International Trade.

Semester V - Economic Development and Indian Economy.

Semester V - Paper VI - Indian and Andhra Pradesh Economy.

Semester VI - Paper - VII(A) (Elective Paper) - Agricultural Economics.

Paper -VIII-A1 Cluster Elective - Agribusiness Environment in AP.

Paper - VIII-A2 Cluster Elective - Agricultural Output Marketing.

Paper - VIII-A3 Cluster Elective - Agricultural Input Marketing.

COURSE OUTCOMES OF ECONOMICS:

- To induce critical thinking skills within the context of subject matter of economics.
- To demonstrate quantitative reasoning skills of collecting processing and interpreting data using statistical and mathematical methods and computer packages.
- To provide understanding of core economic terms, concepts, and theories.
- Students will be able to explain concepts, terminologies and theories in core branches of economics.
- Having critiquing in relation to subject matter of economics.
- Having attitude to observe marginal changes in economic magnitudes.
- Having skills to use quantitative data collections, analysis and interpretation using statistical and mathematical methods and computer packages.

PROGRAMME SPECIFIC OUTCOMES OF ECONOMICS:

- To understand the basic concept of economics.
- An ability to understand the economics theories and functioning of basic microeconomic and macroeconomic systems.
- To understand the economic way of thinking.
- The ability to write clearly expressing an economic point of view.
- To analyze economic behaviour in practice.
- To create students' ability to suggest various economic problems.

Semester I: - Micro Economics - Consumer Behaviour:

CO1: To ascertain the nature, definition and scope of Economics.

CO2: Understand and differentiate, the concepts of Micro & Macro, Static and Dynamic analysis, Normative and positive science, Inductive & Deductive methods, Partial and general Equilibrium.

CO3: To define the concept of utility and satisfaction, differentiate between marginal utility and total utility and to calculate the concept of marginal utility.

CO4: Explains the determinants of demand and supply, Measurement of Elasticity of Demand.

CO5: The students should be able to explain the idea of consumer behaviour using the ordinal approach.

Semester II - Micro Economics - Production and Price Theory:

CO1: To analyse the relationship between inputs used in production and the resulting outputs and costs.

CO2: To analyse different types of Market structures.

CO3: To analyse a firm's profit maximizing strategies under conditions of monopolistic competition.

CO4: To understand the concept of wage determination, collective bargaining, minimum wage.

CO5: To illustrate the meaning of interest and analyse the various theories of interest and rent.

Semester III - Macro Economics - National Income, Employment and Money:

CO1: To understand meaning, definition of Macro Economics - Importance of Macro Economics and its limitations.

CO2: To explain about the national income, calculation methods of national income, and concepts related to national income.

CO3: To interpret Classical theory of Employment, in terms of determining interaction between demand and supply of labour.

CO4: Understand the relationship between investment and savings, demonstrate investment multiplier.

CO5: To illustrate various version of quantity theory of money.

Semester IV - Banking and International Trade:

CO1: Students will be able to understand inflation, types of inflation and causes and effects of inflation measures to control inflation.

CO2: To give in-depth knowledge of Banking & Finance to the students of economics with practical inputs and prepares them as a responsible customer.

CO3: To envisage on NBFCs and defects of Indian money market.

CO4: This provides the information and functions of various financial institutions such as RBI, SEBI, LIC etc.

CO5: This explains about various economic policies like - Fiscal, Monetary and Exchange rate policies and importance of International Trade.

Semester V - Economic Development and Indian Economy:

CO1: Explains determining factors of growth approaches before classical growth theories and analysis of Classical growth theories.

CO2: To learn hardcore economic prescriptions to sustainable development related to the background like education, health, sanitation and infrastructural development, have found a place of pride in explaining the preference of various economies.

CO3: To understand the basic features of the Indian Economy in terms of Demographic features such as Concept of Population Dividend and Population Policy.

CO4: To expose students to national income accounting.

CO5: To acknowledge about the Economic reforms in terms of liberalization, privatization and globalization and also the concept of inclusive growth**.**

Semester V – Paper VI - Indian and Andhra Pradesh Economy:

CO1: The course will discuss changes in the trajectory of agricultural development in India since Independence. Students will be exposed to impacts of policies on the growth processes in Indian agriculture, Rural credit, Micro Finance, Self Help Groups (SHGs), Agricultural Price policy, concept of Crop Insurance, Food Security.

CO2: Equips the students to analyse the basic features of Indian economy and to have a clear understanding of the problems related to the Agriculture, Industry and other sectors of Indian Economy.

CO3: Students acquire the knowledge in Disinvestment in India, FEMA, Foreign direct investment, Services Sector in India.

CO4: Provides the students to know the role of Planning in India Economy and Objectives of Five-year plans.

CO5: Students can comprehend the basics of Andhra Pradesh Economy.

Semester VI - Paper - VII(A) (Elective Paper) Agricultural Economics:

CO1: Enables the students to understand the Nature and Scope of Agricultural Economics and also the Factors affecting agricultural development.

CO2: Students can exhibit the conceptual framework of production and product relationship in farm production.

CO3: To enable students on Growth and productivity trends in Indian agriculture with special reference to Andhra Pradesh

CO4: Provides the students to know the Systems of farming, farm size and productivity relationship in Indian agriculture with special reference to Andhra Pradesh

CO5: Students acquire the knowledge in Emerging trends in production, processing, marketing and exports; policy controls and regulations relating to industrial sector with specific reference to Agro-industries.

Semester VI - Paper - VIII-A1 Cluster Elective - Agribusiness Environment in AP:

CO1: Students gain the knowledge agriculture in development process in Andhra Pradesh vis-à-vis other developed states.

CO2: Facilitates the students to understand inter linkages of agricultural credit and other input markets and product markets.

CO3: Students learn the factors which are responsible for the emergence of Agribusiness sector in Andhra Pradesh.

CO4: Makes the student to have awareness on production and processing trends in exports and imports of major agricultural commodities in Andhra Pradesh.

CO5: To gain knowledge on the perception of Marketing policy, need and structure of APMC, Role of Farmer Groups in the marketing of Agricultural Produce.

Semester VI - Paper - VIII-A2 Cluster Elective - Agricultural Output Marketing

CO1: Students are able to understand Risks in Agriculture.

CO2: To impart knowledge on Weather Based Crop Insurance Model.

CO3: Students gain an understanding on Crop Insurance - Yield Index based Underwriting and Claims.

CO4: The students can acquire knowledge of different schemes on agriculture insurance.

Semester VI - Paper - VIII-A3 Cluster Elective - Agricultural Input Marketing:

CO1: To understand different marketing concepts and marketing systems in context of agricultural inputs.

CO2: To understand the Overview of Input Marketing.

CO3: To understand the concept of Seed Marketing.

CO4: To understand the concepts of Fertilizer Marketing and Plant Protection Chemicals.

CO5: Students able to understand the Farm Machinery and Implement.

DEPARTMENT OF POLITICAL SCIENCE

UNDER CBCS FRAMEWORK WITH EFFECT FROM 2015-16

PROGRAMME: THREE YEAR B.A POLITICAL SCIENCE

PROGRAMME STRUCTURE

First Semester -BASIC CONCEPTS OF POLITICAL SCIENCE	**Second Semester** -POLITICAL INSTITUTIONS
Third Semester -INDIAN CONSTITUTION	**Fourth Semester** -INDIAN POLITICAL PROCESS
Fifth Semester -INDIAN POLITICAL THOUGHT	**Sixth Semester** - WESTERN POLITICAL THOUGHT
Seventh Semester - PRINCIPLES OF PUBLIC ADMINISTRATION	

PROGRAMME SPECIFIC OUTCOMES :

Ps01: Students should be able to thoroughly understand the study of political science.

Ps02: Students should be in a position to understand and follow changes in patterns of political structures.

Ps03: Students should have to concentrate on political knowledge to observe the field level circumstances.

Ps04: Students should be able to understand the cultural, social, political, economic and constitutional environment from the historical perspective of Indian administration .

Ps05: Students should understand the activity and dynamics of Indian government and politics .

Ps06: Students should be able to introduce their skills to work effectively in multi-disciplinary teams.

Ps07: Enabling students to develop a positive attitude towards political science as an interesting subject of study.

COURSE OUTCOMES :

COURSE : SEMESTER I – BASIC CONCEPTS OF POLITICAL SCIENCE

C01 : To explain the definition, nature, scope and importance of political science .

C02 : To analyze the approaches to the study of political science and elements of the state.

C03 : To highlight the concepts of nation, nationality and nationalism.

C04 : To specify the Importance of rights and citizenship .

C05 : To enlighten the concepts of Freedom, Equality and Justice.

COURSE: SEMESTER II- POLITICAL INSTITUTIONS

C01 : To understand the purpose of constitutional law, theory of separation of powers and basic features of parliamentary and presidential forms of government.

C02 : To analyze the comprehensive understanding and the basic features of federal form of government and unitary form of government .

C03 : To explain the features of democracy and models of democracy.

C04 : To study the nature ,role and functions of the judiciary and judicial review .

Course: SEMESTER III- INDIAN CONSTITUTION

C01 : To explain the Indian national movement on the constituent assembly and the nature and composition of the constituent assembly .

C02 : To understand the preamble and the salient features of the Indian constitution .

C03 : To acquaint with the fundamental rights and directive principles of state policy.

C04 : To deal with unitary and federal features of the Indian constitution and tension areas between the union and state governments.

C05 : To observe the working of the Indian constitution.

COURSE : SEMESTER IV- INDIAN POLITICAL PROCESS

C01 : To familiarize with the approaches to study the political process in India.

C02 : To deal with social structure and democratic process

C03 : To spotlight religion and politics

C04 : To understand party and electoral process in india

COURSE : SEMESTER V - INDIAN POLITICAL THOUGHT

C01 : To understand the contribution of ancient indian political thinkers to indian political thought

C02 : To familiarize the importance Renaissance thought

C03 : To deal with the early nationalism

C04 : To understand the religious nationalism

C05 : To explain the democratic egalitarianism

COURSE : SEMESTER VI - WESTERN POLITICAL THOUGHT

C01 : To delineate the contribution of classical political thinkers to western political thinkers

C02 : To cover the early medieval period to the beginning of the modern thought

C03 : To highlight the importance liberal thought

C04 : To understand the basic concept of liberal democratic thought

C05 : To enlighten the philosophical idealism and its critique

COURSE : SEMESTER VII - PRINCIPLES OF PUBLIC ADMINISTRATION

C01 : To familiarize with the meaning, nature and scope of public administration

C02 : To discuss various Administrative Theories

C03 : To deal with various Principles of Organization

C04 : To cover the Structure of various Organizations

C05 : To understand different Theories of Motivation.

DEPARTMENT OF COMPUTER SCIENCE

Program Specific Outcomes:

i) Ability to apply theory of Computer Science in solving the real world problems.

ii) Ability to choose, create and apply the appropriate techniques, resources and tools to predict and model complex situations within the scope and boundaries of the situation.

iii) Create, select, and apply appropriate techniques, resources, and modern IT tools including prediction and modeling to complex activities with an understanding of the limitations.

iv) Exhibit comprehension and understanding of the programmes and apply them in a multidisciplinary environment.

Course Outcomes:

S.No	Dept	Course Code	Course Name	CO Number	Course Outcome
1	Computer Science	CSC1SK	Problem Solving In C	1	Understand the evolution and functionality of a Digital Computer
				2	Apply logical skills to analyse a given problem
				3	Develop an algorithm for solving a given problem
				4	Understand 'C' language constructs like Iterative statements, Array processing, Pointers, etc
				5	Apply 'C' language constructs to the algorithms towrite a 'C' language program
2	Computer Science	CSC2SK	Data Structures Using C	1	Understand available Data Structures for data storage and processing
				2	ComprehendData Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph
				3	Choose a suitable Data Structures for an application
				4	Develop ability to implement different Sorting and Search methods
				5	Have knowledge onData Structures basic operations like insert, delete, search,update and traversal
				6	Design and develop programs using various data structures
				7	Implement the applications of algorithms for sorting, pattern matching etc
3	Computer Science	CSC3SK	Data Base Management System	1	Gain knowledge of Database and DBMS
				2	Understand the fundamental concepts of DBMS with special emphasis on relational data model
				3	Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database
				4	Model databaseusing ER Diagrams and design database schemas based on the model
				5	Create a small database using SQL
				6	Store, Retrieve data in database
4	Computer Science	CSC4SK	Object Oriented Programming Through JAVA	1	Understand the benefits of a well-structured program

				2	Understand different computer programming paradigms
				3	Understand underlying principles of Object-Oriented Programming in Java
				4	Develop problem-solving and programming skills using OOP concepts
				5	Develop the ability to solve real-world problems through software development in high-level programming language like Java
5	Computer Science	CSC5SK	Operating System	1	Know Computer system resources and the role of operating system in resource management with algorithms
				2	Understand Operating System Architectural design and its services
				3	Gain knowledge of various types of operating systems including Unix and Android
				4	Understand various process management concepts including scheduling, synchronization, and deadlocks
				5	Have a basic knowledge about multithreading
				6	Compare different approaches for memory management
				7	Understand and identify potential threats to operating systems and the security features design to guard against them
				8	Specify objectives of modern operating systems and describe how operating systems have evolved over time
				9	Describe the functions of a contemporary operating system

PRINCIPAL
SGK Govt. Degree College
VINUKONDA-522647
Guntur Dist., A.P.