Course Outcome

Science

Department of Chemistry

F. Y. B. Sc.	
Semester -I	
Course	**Outcomes (Students will be able to)**
CH-101: Physical and Inorganic Chemistry	• Develop an ability to use the rules of logarithm, differentiation and integration to solve the chemistry related numerical and derivation's. • Convert scientific equation in straight line to get physical parameter for slope and intercept. • Understand the concepts of Electrolytic conductance, Equivalent conductance, deviation of • conductance with concentration and equivalent conductance at infinite dilution. • ToknowKohlrausch's law and its different applications in measurement of conductance. • Understand the term adsorption , absorption and types of adsorption isotherms. • Able to evaluate the different periodic properties of elements. • Recall the electronic structures, the properties, applications, and the chemical reactivity of the s block elements. • Learn the Complexes of alkali metals with polydentateligands and concepts of crown ether and cryptate.
CH-102: Organic and Inorganic Chemistry	• Learn the general properties and applications of organic compounds in day to day life. • Learn concept of aromaticity and nomenclature of benzene derivatives. • Learn the structural effects. • Learn the types of reactions and reagents. • Learn the preparation and chemical properties of hydrocarbons. • Learn the nomenclature system of hydrocarbon alkyl halide, alcohol phenol and ether. • Learn preparation and chemical properties of haloalkane and haloarene. • Learn preparation and reaction of alcohol , phenol and ether. • Learn the basic concept of ionic equillibria. • Learn the assumption of VSEPR theory. • Explain the geometry of molecule by VSEPR theory.
Semester –II	
CH-201: Physical and Inorganic Chemistry	• Understand various gas laws , deviation of real gases from ideal behavior and its Reasons, concept of liquification of Gases, Joule and Thomson effect. • Understand the term surface tension and viscosity of liquids and

	its measurement. • Learn about spontaneous and non –spontaneous process, laws of thermodynamics, concept of Entropy change and physical transformation. • Learn the occurrence of metals and various steps involved in metallurgical processes. • Understand the electronic structures, variation of periodic properties of p- block element. • able to know the bonding and shapes of important compounds of p-block element.
CH-202 : Organic and Inorganic Chemistry	• Learn the preparation and chemical properties of Aldehyde, ketone, amine, carboxylic acid and their derivative. • Learn the nomenclature system of Aldehyde, ketone, amine, carboxylic acid and their derivative.. • Learn basic terms involved in volumetric analysis. • Learn the calibration of pipette, burette and volumetric flask. • Explain different type of bonds involved in chemical bonding and structure. • Learn the different types of overlap. • Learn the limitations of VBT.
CH-103, 203: Chemistry Practica	• Calibrate the apparatus like volumetric flask, pipette and burette. • Learn the applications of types of titrations for various estimations. • Carry out qualitative analysis of acidic and basic radicals. • Understand the determination of heat of solution, equivalent weight, surface tension, relative viscosity of liquids.etc. • Perform qualitative analysis of organic compounds. • Carry out quantitative analysis by instrumental method using Conductometer.
S.Y. B. Sc.	
Semester -III	
CH 301: Physical and Inorganic chemistry	• Understand the concept of types of solutions, Ideal and non-ideal solutions, Raoults law and vapor pressure of liquids. • Able to prepare different concentrations solution. • Learn the concept Boiling point diagrams of miscible binary mixtures, Azeotropes and Phase diagrams. • Understand colligative properties and its application for calculation of molecular weight of solutes and method of determination. • Learn about d-block elements , general characteristics, reactivity and metal complexes.
CH-302 Organic and Inorganic Chemistry	• Understand the concept of isomers and discuss the isomer which results from free rotation of C-C single bond, from a chirality, from restricted rotation, R, S and E, Z nomenclature. • Study of amines, their formation and reactivity. • Study of reactivity, preparation and reactions of organometallic Li, Cu, Zn compounds. • Understand the importance of analytical chemistry in analysis of compounds by titrimetric, gravimetric and instrumental methods. • Understand the importance of sampling methods and ways of

	interpretation of results of analysis. • Determine the causes of errors and their minimization during analysis Understand application of types of titrations for quantitative analysis of the samples.
CH-303 Practical Chemistry	• Determine the molecular weight of volatile solute and non-volatile solute • Determine the standard electrode potential of electrode potentiometrically. • Estimation of acetic acid, aspirin, chloride Fe II, Cu, Mg by volumetrically. • Students will learn different technique in spectroscopy. • Perform preparation of organic compound.
CH-304 Basic Analytical Chemistry	• Understand importance of analytical chemistry, types of analysis. Concept of sampling, accuracy and errors. • Understand principle, types and applications of acid base titrations. • Understand principle and applications of Precipitation titration. • Understand principle, Classification and applications of Chromatographic techniques.
Semester -IV	
CH 401: Physical and Inorganic chemistry	• Understand concepts of electromotive force and its measurement, Reversible and Irreversible Cells and electrode potential. • Learn the Calculation of single electrode potential and relation between EMF and thermodynamics. • Understand concept of Helmholtz free energy, Gibbs free energy, Fugacity and activity concepts. • Learn the Clapeyron equation and its use. • Learn the basic concept of the co-ordination compound, identify the types of given ligand, physical methods used in study of • Complex and Nomenclature of coordination compounds. • Understands the concept of Conductors, insulators and semiconductors and it applications.
CH-402 Organic and Inorganic Chemistry	• Learn the introduction and active methylene group of synthetic reagent. • Explain the preparation and applications of synthetic reagents AAE and Malonic ester. • Learn the nomenclature of organ metallic compounds. • Explain the preparation and applications of organolithium, Grignard reagent, organocopper, organozinc compounds. • Explain the theories of covalent bonds. • Explain the type of overlap of atomic orbitals. • Explain MO diagram • Explain MO theory of homonuclear and heteronuclear diatomic molecule.
CH-403 Practical Chemistry	• Determine critical solution temperature of phenol-water system. • how to determine the normality and strength of HCl • Understand distillation technique. • Perform Estimation of Ni, Ba and Pb Gravimetrically. • Perform preparation of inorganic compound.

CH-404 Advanced Analytical Chemistry	• Understand the terms, principle and applications of redox titration. • Understand different types of ligands, principle and application of complexometric titrations. • Understand the concept, advantages, principle and applications of gravimetric analysis.
T.Y. B. Sc.	
Semester-V	
CH 351: Physical Chemistry	• Learn the concept of Radioactivity and its application in various field • Understand the importance of salt bridge in electrochemical cell. • To define phase of matter, describe phase change and interpret and construct phase diagram. • Understand the concept electrochemical cell and determination of potential of cell • Understand the laws of photochemistry (Grothus Draper Law and Stark Einstein law) • Understand the concept quantum yield and Fluorescence and Phosphorescence from Jablonski diagram. • Understand the various devices to measure the radiation from radioactive sample.
CH-352: Inorganic Chemistry	• Learn the basic concept of the co-ordination compound, and identify the types of given ligand, chelates. • Understand the different physical method for the study of complexes and main points of Werner theory and isomerism in coordination compounds . • Understand Effective atomic number (EAN) and how to calculate EAN for any given complexes. • Understand the modern theories of metal-ligand bond related to valence bond theory. • Application of CFT related to different geometry e. Square planer, tetrahedral, Octahedral. • Understand the basic concept about CFT e. Spin magnetic moment, crystal field stabilization energy related to weak and strong field, limitation of theory. • Understand assumption and applications of V. B.T., C.F.T. and M.O.T.
CH-353: Organic Chemistry	• Understand concept of Inductive effect, resonance effect, steric effect, hyper conjugation and its effect on the strength of acids and bases. • Understand organic reactions like nucleophilic substitution, electrophilic substitution, nucleophilic addition, Electrophilic addition and elimination. • To write/ explain mechanisms of those types of reactions. • Understand how a reaction takes place in one or more steps. Students will understand the types of intermediates formed in different reactions. • Understand how reagent attacks the substrate molecule and accordingly how bonds break and formed. • Understand how change in structure of substrate, reagent and solvent changes the product formed and its stereochemistry. • Predict the products and to suggest the mechanisms

CH-354: Analytical Chemistry	• Understand procedure of extraction of metal ions using Solvent Extraction process. • Understand the application of Ion Exchange Chromatography method for the separation of cations and anions using different types of resins. • Understand applications of Size Exclusion Chromatography for the separation of analytes based on their size and shapes. • Understand the working of Gas Chromatographic unit and apply the knowledge to separate volatile compounds in sample. • Understand Principle, choice of column materials for HPLC and its application. • Understand Principles of Electrophoresis and choice of techniques of electrophoresis for various applications
CH-355: Industrial Chemistry	• Understand general concept of Industrial chemistry. • Understand manufacturing of sugarcane. • Understand general idea of differ physical methods used in manufacturing. • Understands various types of fertilizer. • Understand manufacturing of Beer and spirit. • • Understand the aspects of small scale industry.
CH 356: B Environmental chemistry	• Understand the concept about atmosphere and different layer and composition. • Understand the concept. awareness about air pollution and organic inorganic pollutants • Understand the concept, water pollution and domestic sewage waste water, industrial pollution agriculture pesticide water pollution • Understand the different methods of water treatment, water effluents and sewage water. • Understand the greenhouse gases and global warming.
CH-357,367: Physical Chemistry Practical	• To prepare molar and normal solutions of various concentrations. • Determine concentration of unknown solutions by colorimetric method. • Measure the pH, pKa and Ka of various acids by potentiometry. • Measure refractive index, molar refraction and unknown concentration of various solvents. • Investigate the reaction rate. • To determine strength and basicity of acid using conductometer. • Determination of optical activity of compound by polarometric method. • Degree of hydrolysis by pH metric method.
CH-358, 368 Inorganic Chemistry Practical	• Estimate ores and alloy by gravimetric and volumetric method. • Separate and analyze binary mixtures by qualitative method • Prepare and determine percent purity of various inorganic complexes. • Perform chromatographic technique (paper chromatography). • Estimate Lead, Iron by gravimetric method. • Estimate Titanium and Iron by Spectrophotometric method.

CH-359, 369 Organic Chemistry Practical	• Separate and analyze binary water insoluble mixture • Separate and analyze binary water soluble mixture • Learn how to estimate –saponification value of oil , acetamide, glycine and glucose by volumetric method • Learn how to estimate basicity of various acids • Learn how to synthesis various organic compounds • Learn technique of recrystallisation.
Semester- VI	
CH-361: Physical Chemistry.	• Understand the types of spectra, Rotational, Vibration and Electronic energy levels. • Difference between order and Molecularity • Understand the first, second and third order reaction. • Understand the concept anisotropic, isotropic, etch figure, polymorphism, Bragg relation • Learn concept Photoelectric effect, Compton Effect and Heisenberg s uncertainty principals. • Understand the concept of X- ray analysis.
CH-362: Inorganic Chemistry	• Understand the electronic structure, Extraction uses, oxidation states biological role of Cu. • Know about the all basic theory of Acid and bases. • Understand the concept of Hard and Soft acid bases concept theories, application and limitations. • Know the different types and theories of Corrosion and how to protect Metal from corrosion.
CH-363 Organic Chemistry	• Understand interaction of radiations with matter. They will understand different regions of electromagnetic radiations. They will know different wave parameters. • Understand principle of mass spectroscopy, its instrumentation and nature of mass spectrum. • Understand principle of UV spectroscopy and nature of UV spectrum. They will learn types of electronic excitations. • Calculate maximum wavelength for any conjugated system. And from the value of λ-max they will be able to find out extent of conjugation in the compound. • Understand principle of Different spectroscopic techniques. • Determine structure of simple organic compounds on the basis of spectral data such as λ max values, IR frequencies, chemical shift.
CH-364 Analytical Chemistry	• Perform the analysis of samples using instrumental methods • Understand the concepts of spectrometry, know the principles of instruments and their applications • Understand principle, working and applications of Flame and Plasma Emission Spectrometry. • Understand principle, Instrumentation and application of Atomic Absorption Spectrophotometry • Understand principle, Instrumentation and applications of Turbidimetry and Nephelometry. • Understand principle, Instrumentation and applications of thermogravimetric methods like TGA, DTA and DSC.
CH-365: Industrial Chemistry	• Understand the process of manufacturing of petrol and gasoline. • Understand the process of manufacturing of methanol.

	• Understand the process of manufacturing of soap. • Understand the process of manufacturing of detergents. • Understand classification of dyes and paints.
CH 366: Polymer Chemistry	• Understand the basic concepts of polymer. • Understand the different methods of polymerization. • Understand various techniques of polymerization. • Understand the preparation, properties and applications of some important polymers. • Understand the concept, importance, determination of glass transition temperature.
Certificate Course entitled "Introductory skills for R & D Chemist"	• Understand the safe use and disposal of primarily required chemicals, Data collection, Report writing and its Importance. • To do Required Calculations in R&D. • Understand Purifications Methods & Techniques of reactants and solvents. • Understand Techniques used during project work. • Understand Isolation Techniques and Spectral Interpretation
M. Sc. –I (Organic Chemistry)	
Semester- I	
CH -110: Physical Chemistry I.	• Understand the terms eigen function, eigen value, operator and postulates of Quantum mechanics. • Mechanics of particle in one, two and three dimensional box. • Learn parent - daughter relationship, application of radioactivity, NAA, • IDA. Effect of radiation and units of radiation. • Ionic strength, activity, activity coefficient and DHO equation its postulates and its mathematical treatment. • Understand the adsorption of gases by solid types of isotherms.
CH- 130:- Inorganic Chemistry – I	• Learn molecular orbitals and its orientation. • Understand about geometry and shape of the molecule • Learn and find out bond order and dipole moments of the inorganic molecule. • Learn 18 electron rule and application. • Determine the point group of inorganic molecules. • Understand preparation and properties of transition metal carbonyls. • Understand concept of symmetry elements in molecules.
CH-150 Basic Organic Chemistry	• Understand stereo chemical principles, enantiomeric relationship R and S, E and Z nomenclature in C, N, S, P containing compound. • Understand SN^1, SN^2 and SNi mechanism and stereochemistry. • Understand NGP by pi and sigma bonds, classical and non - classical carbocations. • Understand alkylation and acylation reaction. • Compare the differ between types of addition, elimination and substitution reaction. • Solve problem type of elimination
Semester-II	

CH -210: Physical Chemistry II	• Understand the thermodynamic description of mixtures state function, exact, inexact differential. • Understand the colligative properties of solutions, depression in f. p., elevation in b.p, osmotic pressure. • Understand the statistical thermodynamics and various partition functions. • Understandtheconsecutiveelementaryreactions,ratedeterminingsteps,steadystateapproximation, pre-equilibria,Michaelis-Mentenmechanism,Lindemann-Hinshelwood mechanism, chain reactions. • Understand the molecular spectroscopy: R, Raman, electronic and Mossbauer and its application.
CH- 230:- Inorganic Chemistry – II	• Learn mechanism in transition metal complexes. • Learn radius ratio rule of coordination no 3,4, • Understand the Born-Haber cycle to calculate lattice energy. • Understand about classification and use of catalyst. • Understand about structure of atom, Hunds rule, Term symbol, calculation of microstates, orbital selection rule. • Know metal complexes involved in biological systems. Vitamin-B12, Chlorophyll, Hemoglobin.
CH-250 Name Reactions, Synthetic Organic Chemistry & Spectroscopy	• Understand mechanism of various name reaction with example. • Understand how to use synthetic reagents of oxidation and reduction for solving the example. • Understand mechanism of rearrangements reaction. • Understand factors affecting the UV absorption spectra. • Understand how to interpret IR spectra on basic values IR frequencies • Determine structure of simple organic compounds on the basis of spectral data.
CH-290:- General Chemistry	• Solve the problems on Chemometrics, Mean and Standard deviation. • Learn theory of electrogravimetric analysis, Electrolytic separation and determination of metals. • Know Instrumentation, choice of Mobile Phase, Solvent Treatment systems, Pumping systems, Sample injection systems, Columns for High Performance Liquid • Chromatography. • Learn principle, theory of Glass Membrane Potential, The Alkaline and Acid Error, Standard Buffers, Accuracy of pH , Measurements with the pH-meter, types Ion-selective • Electrodes. • Learn Voltammetric Electrodes, Detectors, Amperometric Sensors, Amperometric Titrations. • Understand Phosphorescence, Fluorescence and Photo luminescent phenomena used for determination of mixtures.
CH-P-1: Physical Chemistry Practical	• Prepare molar and normal solutions of various concentrations. • Determine concentration of unknown solutions and degree of hydrolysis and hydrolysis constant by Spectrophotometry. • Determine stability constant of a complex ion and standard

	free energy change G0 and equilibrium constant by potentiometry. • Investigate the rate constant for depolymerization , energy of activation and order of the reaction • Calculate Hammett constant and amount of aspirin in the given tablet by pH measurement. • Determine specific rotation and percentage of two optically active substances by polarimetrically.
CH:I-1: Inorganic Chemistry Practical	• Perform gravimetric and volumetric analysis ores. • Analyse binary mixtures by gravimetric and volumetric method. • Prepare various inorganic complexes and determination of its Percent purity. • analyse iron from given drug sample and calcium in milk sample. • Perform paper chromatographic technique.
CH –O-1 Organic Chemistry practical	• Know uses of chemistry software‟s like chem Draw. • Draw the different structure of organic compound. • Perform Thin layer chromatography technique for completion of reaction. • Perform single and two stage preparation. • Apply knowledge of Green principle for organic synthesis • Make use of soxhlet extractor and steam distillation assembly for Purification of organic compound.
M. Sc. –II (Organic Chemistry)	
Semester- III	
CH-350 Organic Reaction Mechanism	• Understand basic concepts of strength of acids and bases, factors affecting the strength of acid and bases. • Acquire the skills to identify the pathway of reaction. Formulate his/her own reasoned opinions in the mechanistic side of organic reactions. • Predict the major and minor products of a variety of organic reactions with appropriate stereochemistry.
CH-351 Spectroscopic Methods in Structure Determination	• Interpret the spectral graphs. • Determine molecular structure by using UV, IR, NMR and Mass. • Learn the structure determination of organic molecules by spectroscopic methods and by using the applications of IR spectroscopy for functional group determination. • Determine the complete structure of compounds using UV, IR, PMR, CMR and Mass spectroscopic methods.
CH-352 Organic Stereochemistry	• Differentiate stereoisomers. • Understood stereochemical aspects of organic reactions. Understood the concept of asymmetric synthesis and resolution. • Understood different types of pericyclic reactions. Understood stereochemical equivalence and nonequivalence
CH-353 Heterocyclic Chemistry	• Understood various methods of synthesis of heterocyclic compounds. • Acquire skill to predict reactivity of heterocyclic compounds. To predict the product and suggest the mechanism. Understand the

	importance of heterocycles in industry as well as in drug discovery.
AC-301 Technical Report Writing	• To be able to write comprehensive literature review, project or scientific reports on a given research topic. • To follow the ethical guidelines while doing research avoid plagiarism in thesis and research publications. • To be able to` present and communicate their scientific work as well as ideas to scientific community. • To utilize the gained knowledge or skills in the scientific research and build his/her career in chemistry research field
Sem-IV	
CH-450: Chemistry of Natural Products	• Know concept of biogenesis of natural products. • Classify sources of various vitamins. • Learn biological importance of vitamins B1, B2, B6, folic acid, B12, C, D1, E, K1, and K. • Understand and apply the role of enzyme in reactions. • Synthesize natural organic compounds by chemical methods. • Learn the stereochemistry of natural product.
CH-451: Synthetic Methods in Organic Chemistry	• Understand Transition metal complexes in organic synthesis, Grubb‟s catalyst, Ziegler Natta catalyst. • Design the organic compounds by use of synthetic reagents • Understanding role of Umpolung in organic synthesis. • Understanding Protection and deprotection in the synthesis of polypeptide and polynucleotide. • Know basic principles of green chemistry and design green synthesis. • Use ecofriendly green reagents, solvents, catalysts and reaction conditions.
CH-452: Heterocyclic chemistry, Chiron approach, chiral drugs and	• Know the main synthetic routes and reactivity for variety of heterocyclic compounds and applications. • Understand Important Terms –Receptor, therapeutic index, bioavailability, Drug assay and Drug Potency used in medicinal chemistry. • Understand Structure of triose, Pentose, hexose, Stereochemistry and reaction of Glucose. • Understand Synthesis and Pharmacological activity of S-Ibuprofin , S-Metaprolol, (+) Ephedrime • Understand basic Pharmacokinetics of drugs, anti-Microbial drugs, Antifungal, Antibacterial, antiviral, antiprotozoals.
CH-O-2: Organic Practical Chemistry	• Separate organic compounds in different phases. • Perform qualitative test to analyze functional group of organic compounds. • Learn distillation technique. • Detect elements N, S, and X in organic compounds. • Use purification techniques of organic compounds .
CH-O-3: Three Stage Preparations	• Perform three stage preparation. • Draw the reaction mechanism. • Purify the organic compounds by crystallization. • Perform chromatographic technique to check completion of reaction. • Apply the knowledge about different reaction conditions.

CHO-4: Short Research Project	• Survey literature for the topic of the project. • Learn to apply reaction conditions for synthesis, isolation of product and give mechanism. • Handle instruments for analysis and discuss their experiment al results. • Used ICT tools to prepare project reports and present it using Power point presentation. • Work within a small team to achieve a common research goal.

Department of Computer Science

F. Y. B. Sc.	
Semester -I	
Course	**Outcomes (Students will be able to)**
CS-101 Essentials of Computer	• Know about the the History of Computers. • Know about the What is Computer and Basic concepts of computer. • Understand about various types of Computers, types of input and output devices. • Understanding of Algorithm and Flowchart of Program. • Know about computer networks, its types and basics of Internet. • Learn computer viruses and its types.
CS 102 C Programming - I	• Understand basic programming skill and structure of program • Be familiar with variable, constants and keywords • Understand operators and library functions • Understand Conditional statements and looping concept • Be familiar with array ,types of array and declaration of array
Semester –II	
CS 201 Internet Computing	• Understand the concept of website and website design process. • Introduction of page and type and navigation theory. • Familiar with various HTML ang CSS tags.
CS 202 C Programming - II	• Understand function, function calling and string function • Be familiar with pointer and operation on pointer • Introduction of structure and union • Understand Graphics in C and graphics function • Concept of file and file processing
CS-103 and 203 LAB Course on Paper I&II	• Introduce with C programming environment. • Understanding of debugging, compiling and executing • programs. Use of array and their applications. • Understanding use of standard library functions. • Efficient use of looping concepts, conditional • statements, goto, returns and continue statements.
S.Y.B.Sc.	
Semester -III	
COMP 211 : Data Structure-I	• Understand about what is data structure and basic algorithmic notations. • Learn the time and space requirement of any algorithm.

	• Understand About Stack,Queue,Linked List • Understand about Generalized List,Ploynomial Manipulation • Know about the file structures.
COMP 212 : Programming in C++-I	• What is Object Oriented Programming Environment? • Understand between Structures Oriented • Programming & Object Oriented Programming. • Understand for Reusable Extensible & Robust Program in C++ • Introduced & Understand for Different object modeling technique ,Generalization ,Aggregation & Metadata.
CS SEC-I (Skill Enhancement Course-I) Software & Hardware Installation Skills	• Installation : Windows 7 Operating Systems • Troubleshooting and Repair Operating System : Windows 7 • Tacking Data Backup and System Formatting • Installation of Different Device and Drivers PCI, PCI-E, AGP 5. Installation of Ms-Office 2010 • Installation of On Board and PCI Device Driver • Installation of Web Camera and CCTV Camera Drivers and Software Installation of Application Software : Photoshop 7.0 , Tally • Installation Dual Operating System like: Windows XP and Windows 7 • Installation and Troubleshooting of Laser Printer 11. Installation and Troubleshooting of Scanner (Photo & Bar Code Scanner)
Semester -IV	
COMP 221 : Data Structure – II	• Understand about various types of tree • Understand about the Traversing and represent the graphs • Know about the different approaches of sorting and searching elements in the arrays. • Understand the different algorithm design technique
COMP 222 : Programming in C++ -II	• Understand For Operator & Function Overloading. • How to Use Of Polymorphism in C++. • Hierarchy Of Classes Using Inheritance in C++. • Use of Pointer. • Template & STL Using Genetic Programmed for C++
COMP 213 and 223 : Practical Course	• Understand the concept of various linear and non linear data structure • Implementation of searching and sorting techniques. • Awareness about OOP concepts. • Understand the concept of Polymorphism, Inheritance, File handing etc.
CS SEC-II (Skill Enhancement Course-II) Theory: 30 Hours Network Security	• How to use any Antivirus software for • Viruses • Worms • Intrusion Tools • Spyware • using Secure Client of Network by using various permissions as well as password protection. • Apply Firewall rules for Inbound and Outbound services. • Create user groups and perform various roles for securing Network 5. Demonstration of securing Wireless Network.
T.Y. B. Sc.	
Semester-V	
UG-CS-311 System Programming	• Understand details about system software • To do basic system program like development of editors lexical analyzers etc

	• Students are familiar with language processing activities-functions of translators, loader and linkers
UG-CS-312 Database Management System	• Solve real world problems using appropriate set, function, and relational models. • Design E-R Model for given requirements and convert the same into database tables. • Use SQL.
UG-CS-313 Software Engineering	• Students are able to perform the E-R Diagram, DFD, Data dictionary, Decision tree about software. • They can also design the software in learned language using the course content. • Get the knowledge of types of testing & how testing is performed in industry.
UG-CS-314 Computer Aided Graphics	• Differentiate between interactive and non-interactive graphics. • Study line Drawing and Circle Drawing techniques and algorithms. • Perform 2D and 3D transformation on different images. • Know about detail working of 2D and 3D clipping and windowing. • Understand raster graphics and hidden surface elimination. Understanding Graphics Concept Practically • Hands on of using standard graphics library • Hands on of implementation of DDA, Bresenham's Line, Circle Drawing Algorithm • Hands on of implementation of 2D Transformation: Translation, Scaling and Rotation • Hands on of implementation of Cohen-Sutherland line clipping algorithm
UG-CS-315 Programming in VB.NET	• get knowledge about .Net Framework, • Will be able to–understand the basic concepts about Programming Styles, Object Oriented Programming and Data Access with ADO.Net
UG-CS-316 (B)JAVA Programming-I	• Get knowledge of JDK environment • Explore polymorphism using method overloading and method overriding • Understand the different aspects of hierarchy of classes and their extensibility • Understands the concept of streams and files • Write programs for handling run time errors using exceptions
CS-Lab-301 Lab on System Programming	• students are able to develop system programs like line editor, SMAC0 and lexical analyser, interrupt handler.
CS-Lab-302 Lab on Programming in VB.NET and Computer Aided Graphics	• Understand for the student to develop the Program for Demonstrate the Graphics :-Circle,Line,2D & 3D Transformation etc.
Semester- VI	
UG-CS-321 Operating System	• Students should familiar with Operating System Services. • Understand CPU scheduling algorithms, memory Management Techniques, Disk Drum Scheduling algorithms, Deadlock

	preventions and avoidance. • Introduction to android operating systems – its architecture, applications and uses.
UG-CS-322 MS SQL Server	• To use SQL & PL/SQL. • To perform advanced database operations. • Create database tables in postgreSQL. • Write and execute simple, nested queries
UG-CS-323 Internet Programming using PHP	• To Design dynamic and interactive Web pages. • PHP framework for effective design of web applications.
UG-CS-324 Theoretical Computer Science	• Understanding the use of Sets, Relations and Graphs. • Understand Languages in TCS. • Introduction of Regular Languages and Expressions. • Understanding Pumping Lemma and its applications. • Explore the knowledge of Pushdown Automata. • Understanding Normal Forms with Examples. • Understanding Turing Machine.
UG-CS-325 Computer Network	• Students understand the information exchange done across the network with the help of OSI & TCP/IP models. • Student understands how errors are captured & handled in network. • Student understands various attack & its prevention techniques.
UG-CS-326 (B) JAVA Programming-II	• Program using graphical user interface with Swing classes • Handle different kinds of events generated while handling GUI components • Create programs using menus and dialog boxes • Program to create applets • Understand advanced java concepts like JDBC, Java Beans.
CS-Lab-304 Lab on MS SQL Server	• to develop database management system using features and services provided by MS SQL Server.
UG-CS-Lab-305 Lab on Internet Programming using PHP	• To Design dynamic and interactive Web pages. • PHP framework for effective design of web applications
CS-Lab-303 and 306 B) Lab on JAVA Programming –I and II	• Students are able to develop GUI applications, Event driven programming, web based programming using JAVA
M. Sc. –I (Computer Science)	
Semester- I	
CS-101 Database Management System (DBMS)	• To analyze Database design methodology. • Acquire knowledge of fundamentals of Database Management System. • Analyze the difference between traditional file system and DBMS. • To deal with different Database languages. • Draw various data models for Database, writing and executing queries to get expected results.
CS-102 Automata Theory and	• Understand, design, construct, analyse and interpret Regular languages, Expression and Grammars.

Computability	• Design different types of Finite Automata and Machines as Acceptor, Verifier and Translator. • Understand, design, analyse and interpret languages, Expression and Grammars. • Design different types of Push down Automata and Turing Machine.
CS-103 Operating Systems	• understand different types of operating systems. • gain extensive knowledge on principles and modules of the operating systems. • understand key mechanisms in the design of operating systems modules. • understand process management, thread management, memory management, file management and deadlock handling. • compare performance of different processor scheduling algorithms. • produce algorithmic solutions to process synchronization problems • understand the issues related to protection and security.
CS-104 (Skill Based) Object Oriented Programming using JAVA	• To understands the fundamentals of Java programming language and its constructs. • To understand concept of object-oriented programming concept using Java. • To implement the applications using the concept of the Inheritance, Interfaces, Lambda Expressions, and Inner Classes. • To design and implement the real-world application using the concept of the Exceptions and Generic Programming • To understand how to use concept of the Graphics Programming, Event Handling, Swing Components, and JDBC in their application.
CS-105- LAB - I LAB on JAVA programming	The above exercise shall make the students competent in the following ways and will be able to learn following parameters at the end of the course. JAVA programming • Write Java application programs using OOP principles and proper program structuring • Implementing user interface: 2D shapes, events, dialog box, menu and popup menu • Developing Applets, multithreaded programs • Implementing generic and JDBC programming • Demonstrate the concepts of polymorphism and inheritance • Write Java programs to implement error handling techniques using exception handling
CS -106-LAB - II LAB on DBMS	After successful completion of this course, students will be able to • To understand Database design methodology. • Acquire knowledge in fundamentals of Database Management System. Work with popular Database languages. • Realise various data models for Database and Write queries in SQL. Familiar with basic database storage structures and access techniques.
Semester-II	

CS-201 Compiler Construction	• Understanding of basic structure of compiler, concepts and terminology in programming languages, lexical analysis, finite state techniques, scanner generator, parsing, kinds of parsers, designing lexical analyzer, scanner and parsers, principal ideas with intermediate code generation, optimizations. Understanding of all concepts essential to design compiler in general for programming languages
CS-202 Artificial Intelligence	• At the end of the course, the student should be able to: 1) Identify problems that are amenable to solution by AI methods. 2) Identify appropriate AI methods to solve a given problem. 3) Design smart system using different informed search / uninformed search or heuristic approaches. 4) Apply the suitable algorithms to solve AI problems.
CS-203 Design and Analysis of Algorithms	• Analyze the asymptotic performance of algorithms. • Write rigorous correctness proofs for algorithms. • Design and analyze divide-and-conquer based algorithms. • Devise and Synthesize greedy and dynamic-programming based algorithms. • Employ graphs to model problems solvable using traversal techniques. • Able to model problems using backtracking • Able to classify nondeterministic polynomial time algorithms.
CS-204 Python Programming	• understand the basic concepts of Python programming. • write Python programs that supports some constructs of functional programming like map, reduce, filter. • understand the use of strings, lists, tuples, dictionaries, and files and able to manipulates data available within them with help of various functions. • understand how to write user defined classes, methods as well as module creation and handle exceptions while implementing python programs. • use regular expression for validating email address or domain name
CS-205- LAB on Design and Analysis of Algorithms (DAA)	• Able to construct logic for the algorithms designed using designing techniques. • Able to do posterior analysis of the algorithms. • Able to debug the algorithms. • Modify to improve performance of the algorithms. • Able to test and profile the algorithms..
CS -206-LAB on Python Programming	• implement Python programs that demonstrates all types of sorting and searching techniques. • write programs that demonstrate the concepts of functions scoping, recursion, list mutability, regular expression and support of function programming constructs through Python programming. • write Python programs that defines user defined classes, methods and module for solving real world problems as well as use of exception handling concepts whenever necessary. • implement programs that uses regular expression for searching

	patterns and validating data. • develop GUI programs using Tkinter
M. Sc. –II (Computer Science)	
Semester- III	
CS-301 Web Application Development Technology	• The student will be able apply technical knowledge and perform specific technical skills, including: • Successful students will able to design web applications using ASP.NET • Successful students will be able to use ASP.NET controls in web applications. • Successful students will be able to debug and deploy ASP.NET web applications • Successful students will be able to create database driven ASP.NET web applications and web services.
CS-302 Digital Image Processing	• Developed scientific and strategic approach to solve complex problems Computer in the domain of Computer Graphics and Digital Image Processing. • Demonstrated various algorithms for scan conversion and filling of basic primitives objects and their comparative analysis and applied 2-D and 3-D geometric transformations, viewing and clipping on graphical objects. • Built the mathematical foundations for digital image representation, image acquisition, image transformation, image enhancement and restoration. • Developed a theoretical foundation of fundamental concepts of digital image processing. • Exposed students to MATLAB Image Processing Toolbox.
CS-303 Software Engineering	• Understand and demonstrate basic knowledge in software engineering • Define various software application domains and remember different process model used in software development. • Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques. • Convert the requirements model into the design model and demonstrate use of software and user interface design principles. • Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them. • Justify role of SDLC in Software Project Development • Generate project schedule and can construct, design and develop network diagram for different type of Projects
CS-304 Windows, WCF and WPF Programming	• Familiar with windows environment and child window controls. • Understand windows communication foundation using WCF contracts, clients and services security. • Understand windows presentation foundation, WPF and .Net programming.
CS-305-LAB – LAB on Web Application	• Students will get hands-on experience on basic concepts in web applications development using ASP.NET technology.

Development Technology	• Students can develop or undertake professional looking real life web sites using ASP.Net technology. • It will help students to grasp other Web Application Development technologies/platforms easily through learn-by-comparison approach so that the learning curve will be smooth and faster.
CS -306-LAB –LAB on Digital Image Processing	• . Developed scientific and strategic approach to solve complex problems Computer in the domain of Computer Graphics and Digital Image Processing using C++ and MATLAB respectively. • Implemented various algorithms for scan conversion and filling of basic primitives objects and their comparative analysis and applied 2-D and 3-D geometric transformations, viewing and clipping on graphical objects. • Exposed students to MATLAB and Image Processing Toolbox. • Used various tools in MATLAB to implemented image transformation, image enhancement in spatial and frequency domain. • Developed the programs on various digital image processing techniques.
Semester-IV	
CS-401 Natural Language Processing	• Students will get idea about know-hows, issues and challenge in Natural Language Processing and NLP applications and their relevance in the classical and modern context. • Student will get understanding of Computational techniques and approaches for solving NLP problems and develop modules for NLP tasks and tools such as Morph Analyzer, POS tagger, Chunker, Parser, WSD tool etc. • Students will also be introduced to various grammar formalisms, which they can apply in different fields of study. • Students can take up project work or work in R&D firms working in NLP and its allied areas
CS-402 Data Warehousing and Data Mining (DWDM)	• After this course students shall be able to – • Explain organization of data warehousing and data marts. • Differentiate between OLTAP and OLAP • Apply data pre-processing techniques • Write basic algorithms for extracting patterns from data (association mining, classification and clustering) • Solve problems related with various aspects of data mining.
CS-403 Optimization Algorithms	• After completion of this course students shall be able to1. write about OR and decision making. • Differentiate between feasible and optimal solution • Apply solving techniques to all types of LPP. • Apply solving techniques to network problems and game theory problems as well.
CS-404- LAB – VII LAB Data Warehousing and Data Mining(DWDM)	• Organize strategic data in an enterprise and build a data Warehouse.
CS -405 Mini Project (200 marks)	• Capability to acquire and apply fundamental principles of Computers Science. • Become master in one's specialized technology.

	• Become updated with all the latest changes in technological world. • Ability to communicate efficiently. • Knack to be a multi-skilled Computer Science professional with good technical knowledge, management, leadership and entrepreneurship skills. • Ability to identify, formulate and model problems and find engineering solution based on a systems approach. • Capability and enthusiasm for self-improvement through continuous professional development and life-long learning

Department of Botany

F.Y.B.Sc	
Semester-I	
Course	**Outcomes (Students will be able to)**
Bot. 101: Microbial Diversity, Algae & Fungi	• To study the diversity among Microbes. • To study systematic, morphology and structure of Bacteria, Viruses, Algae and Fungi. • To study the life cycle pattern of Bacteria, Viruses, Algae and Fungi. • To study the useful and harmful activities of Bacteria, Viruses, Algae and Fungi.
Bot. 102: Plant Taxonomy	• To study the diversity of angiosperms. • To study the comparative account among the families of angiosperms. • To study the economic importance of the angiospermic plants. • To study the distinguishing features of angiosperm families.
Semester-II	
Bot. 201: Diversity of Archegoniates	• To study salient features of Archegoniates. • To make students aware of the status of higher cryptogams& gymnosperms as a group in plant kingdom. • To study the life cycles of selected genera. • To study economic and ecological importance of Archegoniates.
Bot. 202: Plant Ecology	• To know scope and importance of the discipline. • To study plant communities and ecological adaptations in plants. • To know about conservation of biodiversity. • To study the botanical regions of India and vegetation types of Maharashtra.
S.Y.B.Sc	
Semester-III	
Bot. 301: Plant	• To know scope and importance of plant anatomy

Anatomy	• To study various tissue systems • To know primary structure of dicot and monocot plants • To study normal secondary growth in plants and their causes • To study protective tissue system
BOT.302: Plant Physiology	• To know importance and scope of plant physiology. • To study plant and plant cell in relation to water. • To study different process in relation with structure of organism and its environment. • To understand mechanism of absorption of water, gases and solutes. • To understand growth at various level.
BOT. 304: Mushroom Culture Technology	• To learn the history, scope and importance of mushroom technology • To understand nutritional and medicinal values of edible mushrooms • To know about the storage, marketing and various food preparations of mushrooms. • To understand the economics of mushroom cultivation.
Semester-IV	
BOT. - 401: Plant Embryology	• To know the scope and Importance of Embryology • To study structure of micro and megasporangium. • To study pollination, fertilization, Endosperm and Embryogeny. • To give exposure of techniques in embryology
BOT.-: 402 :Plant Metabolism	• To know the scope and importance of plant metabolism. • To study the properties, mechanism and classification of enzymes. • To study the process of photosynthesis in higher plants, C3, C4 and CAM pathways. • To study respiration in higher plants.
BOT.404: Nursery And Gardening	• To know the concept of nursery and Gardening. • To improve the skills for growing fresh and safe vegetables. • To create awareness about home gardening. • To develop different skills regarding the gardening operations among the students.
T.Y.B.Sc.	
Semester-V	
BOT. 351, Paper I: Cryptogams	• To study salient features of Cryptogamic plants. • To make students aware of the status of cryptogams as a group in plant kingdom. • To study the life cycles of selected genera • To study economic and ecological importance of Cryptogamic plants.
BOT. 352, Paper II: Angiosperm	• To study status of angiosperms in plant kingdom • To study origin of Angiosperms with respect to time,

Taxonomy	place, origin and probable ancestors. • To study Pre-Darwinian and Post- Darwinian systems of Classification. • To study various angiosperm families emphasizing their morphology, distinctive features and biology. • To know the role of cytology and Phytochemistry in Taxonomy**.**
BOT. 353, Paper III: Cell and Molecular Biology	• To introduce the students with "Cell Science". • To study Cell wall Plasma membrane, Cell organelles and cell division. • To study the scope and importance of molecular biology. • To study the biochemical nature of nucleic acids, their role in living systems, experimental evidences to prove DNA as a genetic material. • To understand the process of synthesis of proteins and role of genetic code in polypeptide formation.
BOT. 354, Paper IV: Advanced Plant Physiology	• To learn and understand about mineral nutrition in plants. • To study the growth and developmental processes in plants. • To learn about movement in plants. • To study the process of translocation of solutes in plants • To Study the nitrogen metabolism and its importance
BOT. 355, Paper V: Plant Ecology and Phytogeography	• To know scope and importance of the discipline. • To study plant communities and ecological adaptations in plants • To know about conservation of biodiversity, Non-conventional Energy and Pollution. • To study botanical regions of India and vegetation types of Maharashtra. • To study Bioremediation, Global warming and climate change.
BOT. 356.3: Gardening	• To know the concept of garden. • To study the special types of gardens. • To study the different features of garden. • To study the different ornamental garden plants. • To study about the techniques of pot-culture, Bonsai, Topiary, Lawn.
Semester-VI	
BOT. 361 Paper I : Gymnosperms & Paleobotany	• To study Gymnosperms with respect to distinguishing characters, comparison with Angiosperms, economic importance and classification. • To study the life cycles of *Pinus* and *Gnetum*. • To study the scope of Paleobotany, types of fossils and geological time scale. • To study the various fossil genera representing different fossil groups
BOT. 362 Paper II :	• To know scope & importance of Anatomy and

Anatomy & Embryology	Embryology • To study various tissue systems. • To study normal and anomalous secondary growth in plants and their causes. • To give exposure to techniques in anatomy • To study structure and development in microsporangium and megasporangium • To study microsporogenesis and megasporogenesis • To study male and female gametophytes • To study fertilization, endosperm and embryogeny
BOT. 363 Paper III : Genetics, Plant Breeding and Evolution	• To introduce the students with "Science of Heredity". • To study the role of genes in evolution of species. • To study linkage, segregation and mutation of genes during evolution. • To introduce the student with science of plant breeding • To introduce the student with branch of plant breeding for the survival of human being from starvation. • To study the techniques of production of new superior crop verities. • To study the evolution in living organisms
BOT. 364 Paper IV : Plant Biochemistry	• To introduce the students with current status of Biochemistry. • To recognize the impact of Biochemistry on socioeconomic aspects of life. • To develop the knowledge of industrial application of Biochemistry • To inculcate the students with the importance of Biomolecules.
BOT. 365 Paper V : Applied Botany	• To know importance and scope of botanical science in the industries. • To study role of microbial plants in fermentations process. • To study the process of cultivation of cash crops. • To study some plants which are used as herbal cosmetics. • To study technique of plant tissue culture and its application. • To study the role plants in forensic science.
BOT. 366.3 : Horticulture	• To know horticulture, its scope, disciplines and importance • To know horticulture zones of Maharashtra and India • To understand different horticultural practices and their methods • To study importance, principles and types of Bahar treatment • To study role played by green and polyhouses in horticulture • To study production technology, harvesting techniques and marketing of crops grown especially in Khandesh region of Maharashtra

	• To understand methods of preservation and preparation of preserved products prevailing especially in this part of the state.

Department of Zoology

F.Y.B.Sc	
Semester-I	
Course	**Outcomes (Students will be able to)**
ZOO 101 Animal Diversity I (Non chordata)	• To create appreciation on diversity of life on earth. • To understand different levels of biological diversity. • To familiarize taxa level identification of animals. • To study the scientific classification of invertebrate fauna. • To learn the physiological and anatomical peculiarities of some invertebrate phyla through type study. • To learn the evolutionary significance of various invertebrate fauna. • To stimulate the curiosity in living things around them.
ZOO 102 Animal Diversity II (Chordata)	• To learn biodiversity estimation Techniques. • To create interest for conservation of biodiversity. • To make the student observe the diversity in chordates and their systematic position. • To make them aware of the economic importance of some classes.
Semester-II	
ZOO 201 Comparative Anatomy of Vertebrates	• To study and compare the functioning of organ systems across the animal world • To give an over view of the comparative functioning of • different systems in animals • To learn more about human Physiology.
ZOO 202 Developmental Biology of Vertebrates	• To introduce the concepts and process in developmental biology • To help students understand and appreciate the genetic mechanisms and the unfolding of the same during development • To expose the learner to the new developments in embryology and its relevance to Man.
S.Y.B.Sc	
Semester-III	
ZOO 301 Physiology	• To inspire the students in learning the frontier areas of biological sciences. • To study and compare the functioning of organ systems across the animal world. • To give an over view of the comparative functioning of different systems in animals. • To learn more about human Physiology.

ZOO 302 **Biochemistry**	• This course will provide students with a deep knowledge in biochemistry. • Defining and explaining the basic principles of biochemistry useful for biological studies for illustrating different kinds of food, their structure, function and metabolism. • To understand the chemical nature of life and life process. • To provide an idea on structure and functioning of biologically important molecules. • To generate an interest in the subject and help students explore.
SEC I **Apiculture**	• Equip the students interested in the applied branches of zoology with skills and knowledge which can lead to self employment opportunities.
Semester-IV	
ZOO 401 **Genetics**	• To give an in-depth understanding on the principles and mechanisms of inheritance • To help study the fine structure and molecular aspects of genetic material • To provide an opportunity to learn the importance of inheritance in Man.
ZOO 402 **Evolutionary Biology**	• To provide an understanding on the process and theories in evolutionary biology • To help students develop an interest in the debates and discussion taking place in the field of evolutionary biology • To equip the learners to critically evaluate the debates and take a stand based on science and reason • To expose students to the basics and advances in ethology, and generate an interest in the subject in order to understand the complexities of both animal and human behavior.
SEC II **Medical Diagnostics**	• To make aware of the basic philosophy of science, its history, concepts and scope. • To develop proper scientific mind, culture and work habits • To understand the Study of life cycle, role as vector & control measures of: Mosquito - anyone from- *Anopheles/ Aedes/ Culex* • To understand the Preadaptation to infectiousness, Myasis: • Classification according to tissue, vectors specific, sub specific, accidental; clinical presentation humans, syndrome, symptoms, diagnostic, control method prevention, treatment.; Transmission, Parasitoidal etc. • To understand the Manipulation of Host behavior, Parasitism & Altruism, parasites & social behavior of hosts, parasitism & life history, parasitic effects benefiting the host.
T.Y.B.Sc.	
Semester-V	
Zoo 351 **Non chordates III**	• Understand about the Non Chordate animals. • To study the external as well as internal characters of non chordates.

	• Understand the various internal systems like Digestive system, nervous system with the help of charts. • Understand the economical importance of Molluscs.
Zoo 352 **Cell and Molecular biology**	• To emphasize the central role of Cell biology and Molecular biology, being the most developing areas of biological science. • To make aware of different cell organelles, their structure and role in living organisms. • To introduce the nature of genetic materials at molecular level, their expression and regulation. • To develop critical thinking, skill and research aptitudes.
Zoo 353 **Mammalian Histology and** Physiology **I**	• Understand the terms Histology and Physiology • Understand the cell, tissue, organ, system with structures and organisms. • Study the derivatives of skin- horns, nails, hairs. • Study and understand the terms- acidosis, alkalosis, asphexia, hypoxia, anoxia and cyanosis. • Understand the Importance of physiology and branches of it. • Understand the terms-Osmosis, diffusion, pH and Buffer. • Understand the Digestion and Excretion process, by studying the Organs of it • Understand the process of Metabolism. • Understand the term Detoxification. • Understand the Circulatory system and Lymphatic system. • Study the nervous system.
Zoo 354 **Biochemistry**	• Understand the structure and function of carbohydrate, amino acids, proteins, and lipids. • Understand the concept Enzymes and also Vitamins and minerals. • Understand the Principle role of Vitamins in metabolism and Deficiency diseases. • Understand the term pH, Buffer.
Zoo 355 **Systematics, Evolution and Palaeontology**	• To provide an understanding on the process and theories in evolutionary biology. • To help students develop an interest in the debates and discussion taking place in the field of evolutionary biology. • To equip the learners to critically evaluate the debates and take a stand based on science and reason. • To expose students to the basics and advances in ethology, and generate an interest in the subject in order to understand the complexities of both animal and human behavior. • Know the prehistoric species which have been extincted. • To understand the fossils and their formation by different biological ways.
Zoo 356	• Impart basic awareness regarding pest problem and crop

B) Pest management	loss due to their dominance. • Understand various pests affecting our local crops and select the best method for their control. • Acquire basic knowledge and skills in agriculture management to enable the learner for self-employment.
Semester-VI	
Zoo 361 **Chordates III**	• To acquire knowledge on the taxonomic status of the various vertebrate animals and animal groups. • To familiarise the students with the diverse groups of organisms around us. • Understand the systematic position, habit and habitat of Scoliodon. • Acquire the knowledge about structural and functional • Details about Leech as invertebrates and Scoliodon. As vertebrates • Compare structural and functional details in Scoliodon.
Zoo 362 **General Embryology**	• To introduce the concepts and process in embryology. • To help students understand and appreciate the genetic mechanisms and the unfolding of the same during development. • To expose the learner to the new developments in embryology and its relevance to Man. • Understand various stages involved in the developing embryo. • Understand the initial developmental procedures involved in chick. • Understand the processes involved in embryonic development and practical applications of studying the • chick embryology.
Zoo 363 **Mammalian Histology and Physiology II**	• Understand the terms Histology and Physiology • Understand the cell, tissue, organ, system with structures and organisms. • Study the derivatives of skin- horns, nails, hairs. • Study and understand the terms- acidosis, alkalosis, asphexia, hypoxia, anoxia and cyanosis. • Understand the Importance of physiology and branches of it. • Understand the terms-Osmosis, diffusion, pH and Buffer. • Understand the Digestion and Excretion process, by studying the Organs of it • Understand the process of Metabolism. • Understand the term Detoxification. • Understand the Circulatory system and Lymphatic system. Study the nervous system. • Predict the outcome of various cellular reactions carried out in cell and cellular system under various conditions. • Enrich with Histology of different tissues and systems for research and job opportunities in Pathology and Cancer

	research centers.
Zoo 364 Research Methodology	• Understand some basic concepts of research and its methodologies. • Differentiate between the Quantitative and Qualitative • Research and understand different types of Research Design. • Select and define appropriate research problem and parameters. • Organize and conduct research project in a more appropriate manner. • Writing of dissertations, project proposals, project reports, research papers. • Understand intellectual Property Rights – Biopiracy, copyrights, patent and traditional knowledge and plagiarism.
Zoo 365 Microtechnique	• Cell tissue structure, histology of tissues and details of morphology of animals. • Job opportunities in Health institutes, Hospitals and Pathological labs.
Zoo 366 B) Sericulture	• Develop an expert manpower to handle the own sericulture units/entrepreneurship/corporate sector units. • Provide gainful employment, economic development and improvement in the quality of life to the people in rural area.

Department of Biotechnology

F.Y.B.Sc	
Semester-I	
Course	**Outcomes (Students will be able to)**
BT101: Cell Biology (Theory)	• To introduce biotechnology and its various applications in various fields of human life. • To apprise about basic concepts in cell biology. • Learn basic knowledge to cell as unit, cell organelles and its architecture. • Know the structural and functional details of cell. • Find answers related to the scope of biotechnology • Understand how science works. • Aware about biotechnology and its application in various fields. • Differentiate between prokaryotic and eukaryotic cells. • Discuss structure and functions of cell organelles.
BT102: Biochemical Tools (Theory)	• Demonstrate theory and practical skills in different types of microscopy. • Handling techniques of microscopes. • To study Different staining procedures. • Understand the fundamental biochemical concepts and

	familiarize with standard solution, buffer and reactions. • Describe the concepts of pH and its biological significance. • Describe the concepts buffers, Henderson-Hasselbalch equation, biological buffer systems and their importance. • Know the terms and terminologies related to basic biochemical aspects
BT103: Practical Paper I (Practical)	• To familiarize students with instruments operation & safety aspects. • Demonstrate practical skills in microscopy, laboratory equipment and their handling techniques and staining procedures. • Know various stages of cell division. • Understand the significance of each event during meiosis and mitosis. • Perform routine tasks safely and effectively.
Semester-II	
BT 201: Biomolecules (Theory)	• To study the basic concept of biomolecules. • Overview of major biomolecules –carbohydrates, lipids, proteins, aminoacids,& nucleic acids. • Classification, structure,& function of the above mentioned biomolecules. • Specify the biological significance of biomolecules in metabolism.
BT 202: Basic Microbiology (Theory)	• To study the fundamental concepts in Microbiology. • Understand the basic microbial structure. • Study the comparative characteristics of prokaryotes and eukaryotes. • Familiarize the structural similarities and differences among various microbes. • Know various Culture media and their applications. • Understand various physical and chemical means of sterilization. • Know general bacteriology. • Study microbial techniques for isolation of pure cultures of bacteria, fungi and algae. • Learn aseptic techniques and be able to perform routine culture handling tasks safely and effectively. • Know the various Physical and Chemical growth requirements of bacteria and get equipped with various methods of bacterial growth measurement.
BT 203: Practical Paper II (Practical)	• To study basic biochemistry, cultivation techniques for microbes and familiarize with algae, fungi. • Demonstrate theory and practical skills in microscopy and their handling techniques and staining procedures. • Understand the basic microbial practices and study the comparative characteristics of prokaryotes and eukaryotes. • Prepare and view specimens using microscopy (bright

	field microscope). • Aware and train in aseptic handling of microbial specimens. • Practice safe microbiology, using appropriate protective and emergency procedures.
S.Y.B.Sc	
Semester-III	
BT: 301 Basic Genetics (Theory)	• To study the basic concept about Genetics. • Understand basic concept of Gene, DNA. • Study mutation and chromosomal variations. • Learn basic aspect about gametogenesis and cell cycle. • Understand the Mendel's laws.
BT 302: Bioprocess Technology (Theory)	• To understand the basic knowledge in Fermentation Technology. • Build a foundation for more advanced studies in Bioprocess Technology. • Develop an understanding of the various aspects of Bioprocess Technology. • Aware with screening of Industrially Important Strains and culture collection centres. • Understand principles underlying design of Fermenter, Fermentation Process, upstream and downstream processing.
BT 303: Practical Paper III (Practical)	• To study basic genetics and industrial biotechnology. • Train the students on the practical components of the theory courses. • Study & solve different problems regarding genetics. • Know various stages of cell division and understand the significance of each event during meiosis and mitosis. • Develop skill about isolation of industrially important microorganism and familiar with analytical techniques.
SEC I: Algae and Mushroom Cultivation	• know the classification of different varieties of fungi. • Understand the techniques used in the cultivation of edible mushroom. • Know the harvesting of a mushroom crop. • Learn about the post harvesting treatment of a mushroom crop. • Gain adequate knowledge on comparative account of various algae. • Determine the techniques used for cultivation of algae. • Understand cultivation methods with algae biofuel technologies. • Know about commercial and transportation issues of algae biomass.
Semester-IV	
BT 401: Molecular Biology (Theory)	• Understand basic structure of DNA. • Understand central dogma of molecular biology.

	• Understand the process of replication, transcription, translation.
BT 402: Immune Response (Theory)	• Know the cellular ontogeny and organ involvement in immunity. • Explain the principles of self-tolerance and autoimmunity. • Know how the immune system can fight infections and cancer, including examples of immunodeficiency diseases. • Know the difference between innate and adaptive immunity. • Understand what antigens are and how they are presented. • Understand the mechanisms involved in control of immune responses.
BT 403: Practical Paper IV (Practical)	• Understand basics in serological practicals and its handling. • Aware of molecular biology techniques about isolation of genetic material. • Aware and train spectrophotometric estimations of metabolites. • Know about the basic concept in immunology.
SEC II: Bioanalytical Instrumentation	• Acquire comprehensive knowledge of the equipment used in Life sciences. • An overview of the instruments used in isolation and separation of molecules. • Enable the students to understand all aspects of Bioinstrumentation and tools and techniques used therein.
T.Y.B.Sc.	
Semester-V	
BT-501: Genetics and Molecular Biology	• Enrich knowledge base of biological processes through the investigation of the underlying molecular mechanisms. • Students will gain an understanding of chemical and molecular processes that occur in and between Cells. • The course particularly aims at understanding structure, synthesis and replication of nucleic acids.
BT-502: Animal Tissue Culture	• Understand fundamental principles of animal cell and tissue culture • Gain an understanding of cell culture techniques and their applications • Understand concept of transgenesis, transgenic animals and their application as well as the human health care biotechnology
BT-503: Bioengineering	• Understand fundamental principles Bioprocess and bioengineering • Understood Fermentation media, sterilization, as well as media optimization. • Understand concept of transgenesis, transgenic animals and their application as well as the human health care

	biotechnology • Understood the basics of fermentation technology and learnt the concept of screening, optimization and maintenance of cultures.
BT-504: Food Biotechnology	• Understand fundamental principles food and milk microbiology • Understood fermented products, and pasteurization of milk • Understood the basics of food spoilage, food preservation, and fermented food.
BT-505: Agricultural Biotechnology	• Understand applications of biotechnology in agriculture, plant disease control and floriculture. • Understood Nitrogen fixation and Biofertilizer, Rhizosphere microflora and its role in the rhizosphere. • Understood the basics of Plant pathology and disease control, horticulture and floriculture
BT-506(A): Environmental Biotechnology-I	• Domestic waste water treatment, Classification Of Waste water treatment • Biodegradation-Concept, Biodegradation of hydrocarbon, Measurement of biodegradation • Bioremediation-Concept, Methods of Bioremediation (In-situ and Ex-situ Bioremediation) • Understand Xenobiotic and recalcitrant, Metabolism of Xenobiotics
BT-507: Practical Course: Industrial Biotechnology	• Fermentative production of antibiotics/ vitamins, Amylase/lipase, alcohol, organic acid, Acetic acid • Estimation of ascorbic acid, penicillin /streptomycin, Preparation of Saurkaut.
BT-508: Practical Course: Animal Biotechnology and Immunology	• Cell culture media preparation, sterilization, washing, identification of different cell types, • Immunological techniques: Agarose Gel Electrophoresis, Diffusion technique, ELISA tests, Immobilization, blood typing.
BT-509: Practical Course: Environmental Biotechnology	• Isolation and characterization of: food fermenting organism. • Detection of aflatoxin in food, BOD, COD, MBRT of milk, identification of different cell types, carbohydrates and phosphorus and nitrogen of soil.
Semester-VI	
BT-601: Recombinant DNA technology	• Basic principles of genetic engineering, enzymes, vector types, Methods of gene transfer Gene cloning, indirect and direct screening • Expression strategies for heterologous genes, gene bank, animal farming • Techniques and application DNA sequencing
BT-602: Immunology	• Basic principles of Immune system, types of immunity, primary and secondary lymphoidorgan. • Antigen presentation, immune response lymph organs,

	complements system, immunological disorders. • Ag-ab interactions, precipitation, agglutination, RIA, ELISA, monoclonal antibodies.
BT-603: Bioprocess Technology	• Basic principles of upstream and downstream process of different commercially important product;: enzymes, antibiotics, organic acids • Understand Quality and economic aspects ion fermentation • Understand the principles and role of biotechnologist in QC, QA , IPR and patenting.
BT-604: Pharmaceutical Biotechnology	• Gain basic knowledge applications of biotechnology in the field of pharmaceuticals. • Will understand the concept of drug discovery, drug designing. • Will get knowledge of various medicinally important secondary metabolites as well as the role of recombinant DNA technology for the improvement of productivity and efficacy
BT-605: Plant Biotechnology	• Understand totipotency, organization of plant tissue culture, aseptic technique of PTC, meristem culture, organ culture • Principles and applicaitions of phytohormones • Transgenic plants- methods, analysis, applications • Concept of transformation and role of Agrobacterium
BT-606(A): Environmental Biotechnology-II	• Understand basic knowledge of Methods and applications of taxonomy, nomenclature with respect to plants, animals and prokaryotes • Principles and applicaitions bioprospecting, biomonitoring of soil and air • Detail understanding of pprinciples of toxicology and Biodiversity and its conservations
BT-607: Practical Course: Plant Biotechnology	• Isolation and characterization of: *Xanthomonas citri*, *Rhizobium sp*, preparation and efficiency testing of biofertilizer. • Preparation of stock solutions, explant sterilization, media preparation and sterilization, callus culture, shoot tip culture.
BT-608: Practical Course: Genetics and Bioinformatics	• Understand and verification of Mendel's laws using color beads Shall able to perform DNA isolation, perform transformation and conjugation in bacteria. • Understand biological database and database search on web, shall access database. • Preparation of stock solutions, searching for gene and protein sequences.
BT-609: Practical Course: Pharmaceutical Biotechnology	• Understand and perform sterility testing of pharmaceutical products,chemical and biological, MIC • Understand and perform MLT, validation of LAF, membrane filtration and sterility testing.

Department of Physics

F.Y.B.Sc	
Semester-I	
Course	**Outcomes (Students will be able to)**
PHY 101: Basic Mechanics	• Apply the concept of use of knowledge of mechanics to real life problems. • Understanding of the course will create scientific temperament • Understand Derivatives of a vector with respect to a parameter. • Understand the Applications of Homogeneous and non-homogeneous differential equations of 1st and 2nd order homogeneous differential equations with constant coefficients. • Applications of Newton's Laws of motion, Dynamics of a system of particles. • Understand Rotational Motion
PHY 102: Dynamics and Elasticity	• Apply the concept of use of knowledge of Dynamics and Elasticity to real life problems. • Understanding of the course will create scientific temperament. • Understand Newton's Law of Gravitation, Kepler's Laws of Planetary Motion andBasic idea of global positioning system. • Understand Simple harmonic motion and their parameters. • Understand Hooke's law, Stress-strain, viscosity and general concept of fluid flow
PHY 103: Lab-l	• Apply the concept of use of knowledge of Mechanics to real life problems. • Understanding of the course will create scientific temperament. • Understand the real life Phenomenon. • Demonstrate an understanding of the scientific method and an ability to apply the scientific method in practice. • Choose appropriate tools and methods to solve scientific problems. • Accurately record, analyse, interpret and critically evaluate their findings. • Communicate the solution to a problem or the results of a scientific investigation using effective oral, written and presentation skills.
Semester-II	
PHY 201: Electricity	• Apply the concept of use of knowledge of Electricity and Electrostatics to real life problems.

and Electrostatics	• Understanding of the course will create scientific temperament. • Understand vector algebra, Gauss-divergence theorem and Stoke's theorem of vectors. • Understand Network theorems in current electricity. • Understand Electrostatics, Gauss's theorem of electrostatics and Applications of Gauss theorem.
PHY 202: Dielectrics, magnetism and electromagnetism	• Apply the concept of use of knowledge of Electricity and Magnetism to real life problems. • Understanding of the course will create scientific temperament. • Understand the Capacitance and dielectrics, Capacitors. • Understand the Magnetic properties of materials and Biot-Savart's law & itsapplications-straight conductor. • Understand the Electromagnetic Induction, Faraday's laws of electromagnetic induction. • Maxwell`s equations and Electromagnetic wave propagation through vacuum and isotropic dielectric medium, transverse nature of EM waves, polarization.
PHY 203:lab-ll	• Apply the concept of use of knowledge of ELECTRICITY AND MAGNETISM to real life problems. • Understanding of the course will create scientific temperament. • Understand the real life Phenomenon. • Demonstrate an understanding of the scientific method and an ability to apply the scientific method in practice. • Choose appropriate tools and methods to solve scientific problems. • Accurately record, analyse, interpret and critically evaluate their findings. • Communicate the solution to a problem or the results of a scientific investigation using effective oral, written and presentation skills.
S.Y.B.Sc	
Semester-III	
PHY 301: Thermodynamics and Kinetic theory of gases	• Apply the concept of use of knowledge of Waves and Oscillations to real life problems. • Understanding of the course will create scientific temperament. • Understand the Simple Harmonic Motion and its Composition with Lissajous Figures. • Understand the Un-damped free oscillations, Damped free oscillations, Differential equation of damped harmonic oscillator and its solution. • Understand the Idea of forced oscillations, Resonance and its types. • Understand the Sound intensity, Loudness, Pitch, Quality and timber, Acoustic intensity level measurement,

	Acoustic pressure and its measurement. • Understand the Doppler effect, Doppler effect in sound, Expression for apparent frequency
PHY 302 (A) : Electronics-I	• Apply the concept of use of knowledge of Electronics to real life problems. • Understanding of the course will create scientific temperament. • Understand the P-N junction diode and its working. • Understand the Rectifiers, Filters and its types and its working. • Understand the Basic construction of bipolar transistors (NPN and PNP), operation of transistor, transistor circuit configurations • Understand the Transistors Amplifier Sinusoidal Oscillators • Understand the Numbers systems and digital circuits.
PHY 302 (B) : Instrumentation-I	• Learn fundamentals of measurements. • The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument. • The ability to select a suitable measuring instrument for a given application. • Able to measure temperature using Non-electrical, Electrical, and radiation methods. • Determine pressure using different gauges. • Analyze the response of acoustical instruments • Learn different flow meters. • Able to measure magnetic field using Hall gauge meter and search coil method.
PHY 233: Practical Course – I	• Apply the concept of use of knowledge Waves and Oscillations and Electronics toreal life problems. • Understanding of the course will create scientific temperament. • Understand the real life Phenomenon. • Demonstrate an understanding of the scientific method and an ability to apply thescientific method in practice. • Choose appropriate tools and methods to solve scientific problems. • Accurately record, analyse, interpret and critically evaluate their findings. • Communicate the solution to a problem or the results of a scientific investigationusing effective oral, written and presentation skills.
PHY 304: Skill Enhancement Course I	• Learn about conventionaland non conventionalenergy sources as well as solar energy, Hydro andBiomass energy,Geothermal energy and Energy harvesting.
Semester-IV	
PHY –401: Modern	• Apply the concept of use of knowledge of Modern Physics

Physics	to real life problems. • Understanding of the course will create scientific temperament. • Understand the Energy crisis, conventional and non-conventional energy sources. • Understand the Principle of LASER, Characteristics of LASER , Basic stepsrequired to form a LASER. • Understand the Bohr's and Sommerfield theories of hydrogen atomUnderstand theSound. • Understand the Wave particle duality of matter, de-Broglie hypothesis, Expressionfor matter waves,
PHY-402: Optics and LASERS	• Apply the concept of use of knowledge of Optics to real life problems. • Understanding of the course will create scientific temperament. • Understand the Deviation produced by thin lenses, Chromatic aberration, Achromatism. • Understand the Interference of Light, Newton's rings Michelson Interferometer. • Understand the Diffraction: Fresnel and Fraunhoffer diffraction, Fraunhoffer diffraction, Fresnel diffraction.
PHY 403: Practical Course-II	• Apply the concept of use of knowledge MODERN PHYSICS & OPTICS AND LASER to real life problems. • Understanding of the course will create scientific temperament. • Understand the real life Phenomenon. • Demonstrate an understanding of the scientific method and an ability to apply the scientific method in practice. • Choose appropriate tools and methods to solve scientific problems. • Accurately record, analyse, interpret and critically evaluate their findings • Communicate the solution to a problem or the results of a scientific investigation using effective oral, written and presentation skills.
PHY 404: Electrical Circuits and Network Skills	• Learn basic electrical principles, electric circuits, electrical drawings and symbols. Know about generators and transformers, Electric motors, electrical
T.Y.B.Sc.	
Semester-V	
PHY 351: Mathematical Physics	• Have a good grasp on of vector analysis, including important mathematical theorems. Student will be able to apply the vector properties and use the theorems to understand basic physical phenomena. • Able to solve ordinary second order differential equations important in the physical sciences; solve physically relevant partial differential equations using standard

	methods like separation of variables etc. • Learn how to use different special functions which are helpful in several physical phenomena. • Have received the basic concepts and training of special theory of relativity. Student will be familiar with examples of how formulate certain physical laws, Lorentz transformation, time dilation, length contraction etc using concept of relativity. • Be able to solve basic classical variation problems • Have received training in clear argumentation and presentation, and how to present your result in tidy way • Skilled in solving mathematical problems using various mathematical techniques
PHY-352: Classical Mechanics	• Enters deeply in the subject of mechanics • Learn to think about different motions which can be observed in day to day life or in the universe. • Apply basic knowledge of physics of motion, force, Newton's laws of motion to solve the related problems • Able to discuss about central forces like gravitational force and understand phenomena like planetary motion and scattering, inverse square law on basis of central force. • Learn advanced mechanics like Lagrangian formulation, Hamiltonian formulation and apply it for different problems in mechanics • Learn to apply it for rotating coordinate system, Coriolis force.
PHY- 353: Atomic and Molecular Physics	• To explain the observed dependence of atomic spectra lines in externally applied electric and magnetic fields • To state and Justify the selection rules for various optical spectroscopes in terms of symmetries of molecular vibrations • List different types of atomic and molecular spectra • Describe theories explaining the structure of atoms and the origin of the observed spectra • Identify atomic effect such as space quantization and Zeeman Effect. • To understand X-rays and its characteristic • To understand Moseley's law and its importance, regular and irregular doublets.
PHY-354(B): Instrumentation II	• Recognize the importance of instruments. • Use basic electronic test equipment. • Describe the operation of various analog and digital transducers. • Differentiate between ADC and DAC, and describe the advantages of each. • Describe the operation of various output display devices.
PHY 355:	• Able to learn about crystal systems, packing fraction,

Solid State Physics	various terms related to crystal structure • Have basic knowledge of different crystal structures • Able to learn about the confirmation of solid structure using x ray diffraction techniques • Learn to calculate different physical parameters like lattice constant, inter planer distances using the concepts involved in diffraction technique • Understand the concept of reciprocal lattice and its different properties • Will learn the concept of UV spectroscopy • Understand the basics of bonding in solids Learn various types of bonding in solids • Able to calculate Madelung constant and energy for NaCl • Learn lattice heat capacity of solids, Classical, Einstein, Debye theory of specific heat of solids • Understand vibrational modes of monoatomic lattice Learn about Drude- Lorentz theory, Somerfield model, 1-D, 3-D density of states in concern to free electron model • Able to know about Fermi energy, position of Fermi energy in semiconductors • Able to distinguish between metals, semiconductor and insulators Understand concept of hole
PHY- 356 (A): Technical Electronics - I	• Analyze components associated with analog electronic systems. • Demonstrate proficiency in the use of electronic equipment and devices. • Communicate effectively in technical and non-technical environments. • Assist in design of PCB making. • Describe the application of transducers. • List and explain the different data convertors. • Apply basic electronics concepts to technical problem solving. • Use effectively the basic electronics measuring instruments.
PHY 357: Practical Course-I	• Acquire skills of physics experimentation. • Able to determine the movement of inertia by Bifilar suspension. • Determine elastic properties of different materials. • Determine the resolving power of grating. • Able to find out resistivity of semiconductor materials using four probe method. • Able to find out velocity of sound in different liquid using ultrasonic Interferometer. • Determination of circular aperture of LASER.
PHY 358: Practical Course-II	• Understand characteristics of UJT. • Recognize application of UJT. • Understand characteristics of FET.

	• Recognize application of FET. • Design and built Wien bride oscillator. • Built and test DAC using R-2R ladder network. • Learn use of function generator. • Learn characteristics and application OPAMP. • Understand characteristics of LDR
Semester-VI	
PHY 361: Classical Electrodynamics	• With revision of electrical charge, field, potential and coulombs law the student will learn Gauss law and its applications • understand the basics of dielectric materials and behavior of dielectric materials in electrostatic field and also the concepts of permittivity and susceptibility • learn about magnetic induction and behavior of magnetic materials in current carrying loop also the concepts of permeability and magnetic susceptibility learn different laws of classical electrodynamics lie faraday's law, Ampere's law, Maxwell's equations etc • learn the nature of electromagnetic energy and its propagation in free space like poynting vector
PHY 362: Quantum Mechanics	• Understand basics of quantum mechanics using Schrödinger wave equation • Learn to apply Schrödinger wave equation to different quantum mechanical problems and solve • Learn complete theory of Hydrogen atom with quantum mechanical approach and to define four quantum numbers • Learn new ideas about operators in quantum mechanics and their types and to apply it for momentum, position energy etc. • Able to know about Eigen energy values, parity etc
PHY 363: Nuclear Physics	• Learn about basic constituents of nucleus and its properties like mass, shape, size , charge , Parity, nuclear magnetic moments etc • Understand the phenomena of radioactivity and its application to different fields Learn about half life, mean life, radioactive decay law • Understand the use of different nuclear models like shell model, liquid drop model to seek the information about nucleus behaviour Learn the nuclear reaction and outcome of these reactions in the form of energy • Learn how to calculate the release of large amount of energy in these reactions. Students are also made aware to know the different kind of nuclear processes like fission n fusion, energy available in these processes, to utilize these energies what experimentation required and how to build and control nuclear reactors. • Learn how to detect the energetic particles like alpha beta, gamma etc. How to design n build the nuclear detectors.

	• Understand how these detectors can be used in different experiments to know about wonders of nature as the penetration of ionizing radiations into the matter has been of theoretical as well as practical importance. • Learn to recognize particles with such experiments. Student will also learn the Nuclear particle Accelerators; principle construction and applications
PHY: 364: Statistical Mechanics & Thermodynamics	• learn basic concepts of statistics like probability distribution , binominal distribution and Gaussian distribution understand macroscopic and microscopic states of the systems, statistical ensembles learn about phase space and calculation of microstates of an ideal monoatomic gas • learn thermodynamic equilibrium, constraints and Boltzmann's relation of entropy • learn First law of thermodynamics and statistical calculations of thermodynamic quantities • learn applications of canonical distribution such as curie's law of paramagnetism and Maxwell's law of velocity distribution • understand partition function and partition function for ideal gas • understand thermodynamic potentials and Maxwell's relations • learn First and Second equation of T ds • learn energy equation and Joule –Thomson effect
PHY 365: Elements of Material Science	• Understand Different types of materials their properties ,classification. • Understand advance , smart, nano materials • Learn Mechanical, Thermal , Electrical Properties of material • Understand basic concept of Dislocations and Plastic deformation • Understand Atomic Diffusion and its mechanism • learn state Fick's laws • Study and understand Phase diagram, classification, interpretation. • Learn Binary phase diagram.
PHY 366(A): Technical Electronics - II	• Analyze components associated with sound systems. Recognize basics of planning and installation of public address system. • Work in a team using technical knowhow, common tools and environments to achieve project objectives. • Communicate effectively about environment cautiousness regarding sound pollution. • Able to test analog & digital electronic systems for given specifications. • Describe the application of transducers.

	• Know basics of medical instrumentation. • Describe & list the application of modern home appliances.
PHY 367: Practical Course–III	• Determine the surface tension by different method. • Will test thermal conductivity of rubber by tubing method. • Verify laws of probability distribution by different variables. • Determine characteristics of G.M. counter. • Find out the ration of e/m using Thomson's method. • Understand the directional characteristics of unidirectional microphone. • Able to find out viscosity of various liquids by rotating cylinder method
PHY 368: Practical Course–IV	• Will perform experiments on Material Science, thermodynamics, and Electronics. • Test the specific heat of different materials at different temperatures. • Determine characteristics of thermistors. • Built and test modulus of counters. • Built and test precision rectifier. • Study use of OPAMP.
PHY 359 & 369: Project work	• Learn Project Selection. • Understand Literature Search Strategy and Literature Review. • Able to plan Project. • Communicate effectively during the seminar on the selected topics. • Will learn to prepare project presentation by PPT on LCD projector. • Perform Experimental work. • Characterize the samples, if any. • Analyze the results. • Draw conclusions.

Department of Electronics

F.Y.B.Sc	
Semester-I	
Course	**Outcomes (Students will be able to)**
ELE-101 Network Analysis and Semiconductor Diodes	• Understand and analyze linear basic electronic components and electronic circuits • Analyze basic AC & DC circuit for voltage, current and power by using KVL, KCL, and network theorems
ELE-102 Digital Integrated Circuits	• Get familiar with different number systems. • To study logic gates and their usage in digital circuit s.

ELE-103 Electronics Lab-I	• Apply knowledge to develop circuits using electronic components. • Simulate complex circuits and understand the behavior of the systems.
Semester-II	
ELE-201 Analog Electronics	• To introduce basics of transistor circuits • Exposure to transistor applications
ELE-202 Linear Integrated Circuits	• Understand the characteristics of IC and Op-Amp and identify the internal structure.
ELE-203 Electronics Lab II	• Handle simulation software to analyse electronics circuits
S.Y.B.Sc	
Semester-III	
ELE-301 Analog Communication	• Understand and identify the fundamental concepts and various components of analog communication systems • Develop the ability to compare and contrast the strengths and weaknesses of various communication systems
ELE-302 Microprocessors and Applications	• To provide exposure and insight of 8085 microprocessor. • Understand and analyse 8085 microprocessor and its programming.
ELE-303 ELECTRONICS LAB -III	• Apply knowledge to develop circuits of analog modulation and demodulation. • Apply the concept and knowledge of microprocessors to real life problems • Learn microprocessor programming
Semester-IV	
ELE-401 Digital Communication	• Able to understand basic theories of Digital communication system for practical applications • Able to design and implement various digital modulation and demodulation techniques
ELE-402 Microcontrollers and Applications	• Understanding of the course and create scientific temperament and give exposure to the students for independent use of microcontroller for innovative applications • Gain knowledge of microcontroller programming
ELE-403 ELECTRONICS LAB -IV	• Able to identify and describe different techniques in modern digital communications, in particular in source coding using MATLAB or similar tools • Learn Microcontroller programming with simulator

Department of Mathematics

F.Y.B.Sc	
Semester-I	
Course	**Outcomes (Students will be able to)**

MTH 101: Matrix Algebra (18-19)	• Understand concepts on matrix operations and rank of the matrix. • Understand use of matrix for solving the system of linear equations. • Understand basic knowledge of the eigen values and eigen vectors. • Apply Cayley-Hamilton theorem to find the inverse of the matrix. • know the matrix transformation and its applications in rotation, reflection, translation
MTH 102: Calculus	• Understand basic concepts on limits and continuity. • Understand use of differentiations in various theorems. • Know the Mean value theorems and its applications. • Make the applications of Taylor's, Maclaurin's theorem. • Know the applications of calculus.
MTH - 103: Graph Theory	• Ability to define and manage graphs, connected graphs. • Understanding a concept of Cut set and cut vertices.
Semester-II	
MTH 201: Ordinary Differential Equations	• Understand basic concepts in differential equations. • understand method of solving differential equations • understand use of differential equations in various fields
MTH 202: Theory of Equations	• Students can find out roots of any equation of degree less than or equal to five. • Theory of equations is highly useful in various subjects like algebra, linear algebra, calculus, ordinary and partial differential equations etc.
MTH 203(A): Laplace Transform	• Understand basic concepts on Laplace and Inverse Laplace transforms. • Understand convolution theorem. • understand use of Laplace transform in solving Differential Equations
S.Y.B.Sc	
Semester-III	
MTH -301: Calculus of Several Variables	• limit and continuity of functions of several variables • Extreme points of function and their maximum, minimum values at those points. • Meaning of definite integral as limit as sums. • how to solve double and triple integration and use them to find area by double integration and volume by triple integration.
MTH -302(B): Theory of Groups and Codes	• Understand group structures which are useful to understanding ideas of modern mathematics. • understand solutions to polynomial equations • understand concepts of homomorphisms and isomorphisms • Students will understand basic concepts in codding theory.

MTH 304: Set Theory and logic SEC- 1	• Uses of the language of set theory, designing issues in different subjects of mathematics • understand the issues associated with different types of finite and infinite sets via countable uncountable sets • knowledge of the concepts and methods of mathematical logic, set theory, relation calculus, and concepts concerning functions which are included in the fundamentals of various isciplines of mathematics • understanding the role of propositional and predicate calculus • able to provide the logical mathematical reasoning, formulate theorems and definitions
Semester-IV	
MTH -401: Complex Variables	• Students will understand the concept of analytic function and the Cauchy Riemann Equations • Students will understand harmonic functions • Students will understand complex integrations • Students will understand calculus of residues.
MTH-402(A): Differential Equations	• Students will understand the concept of Lipschitz condition • Students will understand method of variation of parameters for second order L.D.E. • Students will understand simultaneous linear differential equations and method of their solutions • Students will understand Pfaffian differential equations and method of their solutions
MTH 404: Vector Calculus SEC- 2	• understand scalar and vector products • Understand vector valued functions and their limits and continuity and use them to estimate velocity and acceleration of partials. • Calculate the curl and divergence of a vector field. • Set up and evaluate line integrals of functions along curves
T.Y.B.Sc.	
Semester-V	
MTH – 351 : Topics in Metric Spaces.	• Understand the Euclidean distance function on AB and appreciate • its properties, and state and use the Triangle and Reverse Triangle Inequalities for the Euclidean distance function on AB • Explain the definition of continuity for functions from AB to AD and determine whether a given function from AB to Adis continuous • Explain the geometric meaning of each of the metric space properties • Distinguish between open and closed balls in a metric space and be able to determine them for given metric spaces

	• State the definition of continuity of a function between two metri space.
MTH-352 : Integral Calculus	• Understand the structure of Riemann Integration • Understand the Improper integrals with finite limit and infinite limit their properties. • Learn the concepts of Beta and Gamma Integrals.
MTH-353: Modern Algebra	• know the use Permutation Groups and normal Subgroups and group isomorphisms • Know Ideals in rings, Quotient Rings and Isomorphism of Rings • Know polynomial Rings and irreducibility of polynomials
MTH -354: Lattice Theory	• Understand the structure of poset and lattice, Represent lattice in diagrammatic form • Learn the concepts of ideals and their properties.and concepts of homomorphism. • Understand modular and distributive lattice and their interrelation.
MTH-355(A) C-Programming	• Ability to define and manage data structures based on problem subject domain. • Ability to work with textual information, characters and arrays of complex objects. • Understanding a defensive programming concept. • Ability to handle possible errors during program execution
MTH-356(A) Vector Calculus	• Define curves and their related elements, do calculations concerning them. • Define derivation of functions of several variables, directional derivatives and their related elements, calculate Jacobian matrices of functions of several variables. • Evaluate multiple integrals (double and triple integrals). • Define vector fields (gradient, divergence, rotational). • Evaluate the integrals of functons and vector fields on surfaces. • Express and prove Stokes's and Divergence Theorems. • Define differential forms on R^n and know basic properties of differential forms. • Define exterior derivative and know basic properties of the induced mappings. • Use Stokes's Theorem for integrals of differential forms.
MTH-357: Prac. Course based on (MTH-351,352)	• To develop analytical and computational skills • To get hands on training for solving problems of Metric spaces and Riemann integrals. • Students will develop problem solving problems on metric spaces and Riemann integrations.
MTH-358: Prac. Course based on (MTH-353,354)	• To develop analytical and computational skills • To get hands on training in solving problems of groups, rings and Lattice Theory. • develop problem solving skills
MTH-359: Prac.	• Develop problem solving skills

Course based on (MTH-355,356)	• Develop computer programs for problems of number theoretic problems.
Semester-VI	
MTH-361: Measure and integration Theory	• Learn measurable sets. Learn the concept of Sets of measure zero. • Understand why a more sophisticated theory of integration and measure is needed. • Show that certain functions are measurable.
MTH-362: Method of Real Analysis	• solve Convergence and divergence and use to test for absolute convergence, • understand Sine and cosine series in half range
MTH-363: Linear Algebra	• solve Rank and nullity theorem • Use Cayley Hamilton theorem, Euler's theorem and finding Eigen values and Eigen vectors of linear transformation. • Understand Kernel and image of linear transformations. • Understand Singular and non-singular linear transformations
MTH-364: Ordinary and Partial Differential Equation	• Know the exact differential equation and its solution. • Solve the exact differential equations by using integrating factor. • Solve the linear differential equation of second order by using various methods.
MTH-365(A): Optimization Techniques	• Solve the linear programming problem by graphical method and simplex method. • Learn the unbounded, alternative and infeasible solutions of LPP by graphical and simplex method. • Understand the standard and canonical form of LPP. • find the optimal solution of TP by MODI method. • solve the solution of assignment problems by Hungerian Method. • Understand the unbalanced, balanced, maximization, restricted AP and alternative solution of AP. • Understand the saddle point, maximin-minimax principal, two person zero sum game. • use of dominance property to find the solution games
MTH-366(A): Applied Numerical Methods	• Apply numerical methods to find our solution of algebraic equations using different methods under different conditions, and numerical solution of system of algebraic equations • Apply various interpolation methods and finite difference concepts. • Work out numerical differentiation and integration whenever and wherever routine methods are not applicable. • Work numerically on the ordinary differential equations using different methods through the theory of finite differences.

MTH-367: Prac. Course based on (MTH-361,362)	• Students will develop problem solving skills
MTH-368: Prac. Course based on (MTH-363,364)	• Understand basics of vector spaces and method of solving differential equations
MTH-369: Prac. Course based on (MTH-365,366)	• Students will develop problem solving analytical and computational skills.

Arts

Department of Geography

F.Y.B.A	
Semester-I	
Course	**Outcomes (Students will be able to)**
G. G. 101 - PHYSICAL GEOGRAPHY: PART– I (Lithosphere)	• Understand the effect of rotation of revolution the Earth • Understand interior structure of the earth • know the importance of longitudes & latitudes • International Date line and Standard time • Understand Theory regarding of Origin of Continents and oceans • Study the formation of Rocks • Understand the work of internal and external forces and their associated Landforms. • Study the erosional and depositional land forms of Rivers and Sea Waves. • Understand the concept of mass Wasting • Understand the Application of Geomorphology
Semester-II	
G. G. 101 - PHYSICAL GEOGRAPHY: PART - II(Atmosphere & Hydrosphere)	• Understand the importance of Atmosphere • Understand heat balance. • Understand the types of winds • Understand the structure, composition of Atmosphere. • Understand weather phenomena winds, humidity and precipitation. • Understand properties of ocean water. • Knowledge about effect of ocean Currents. • Study about types of tides. • Study of costal environment and Ocean Resources
F.Y.B.Sc	
Semester-I	
G. G. 101 Physical Geography (Lithosphere - 1)	• Develop an idea about geomorphology and different types of fundamental concepts. • Explain different types of geomorphic processes like

	weathering and mass wasting and cycle of erosion.
G. G. 102 Physical Geography (Atmosphere)	• Understand the importance of Atmosphere • Understand heat balance. • Understand the types of winds • Understand the structure, composition of Atmosphere. • Understand weather phenomena winds, humidity and precipitation.
G. G. Practical in Cartographic Technique	• Understand the types and scales of Data measurement. • Use data representation by various techniques of maps and Diagrams. • Understand the map projections definition and necessity of projections and types perspective and non-perspective, conventional and classification of projection. • Understand and graphical construct the polyconic projection, international map projection, • universal transverse Mercator (UTM) projection and mollweide projection.
Semester-II	
G. G. 201 Physical Geography (Lithosphere - 2)	• Understand the processes of erosion, deposition and resulting landforms. • Acquire knowledge about slope forms and processes.
G. G. 202 Physical Geography (Hydrosphere)	• Understand properties of ocean water. • Knowledge about effect of ocean Currents. • Study about types of tides. • Study of costal environment and Ocean Resources
G. G. Practical Geography (Map Projection)	• Develop an idea about scale and draw different types of scale like linear, diagonal and vernier. • Acquire knowledge different types of map projection. • Gain knowledge about topographical maps and apply this knowledge in ground serface. • 4. Learn the use of various minor instruments like rotameter, Planimeter and Pantograph.
S.Y.B.A	
Semester-III	
G. G. 231 – General Cartography	• Understand the types and scales of Data measurement. • Use data representation by various techniques of maps and Diagrams. • Understand the map projections definition and necessity of projections and • Type's perspective and non-perspective, conventional and classification of projection. • Understand and graphical construct the polyconic projection, international • Map projection, universal transverse Mercator (UTM) projection and mollweide projection.
G. G. 232 Geography of Tourism	• To Students Understand about the tourism influencing factors: historical, natural, social cultural and economic. • Study the tourism motivating factors for pilgrimages,

	leisure, recreation, elements. • Understand the Tourism types: eco-ethonocoastal and adventure tourism, national and International tourism, globalization and tourism. • To Stud tourism attraction, evolution of tourism, promotion of tourism, case studies from in India. • Study and understand the environmental laws and tourism-current trends, spatial and recent changes, Tourism circuits-short and longer, accommodation and supplementary accommodation other facility, Indian hotel industry.
G. G. 233 Practical Geography (Scale and Map Projection)	• Understand the types and scales of Data measurement. • Use data representation by various techniques of maps and Diagrams. • Understand the map projections definition and necessity of projections and types perspective and non-perspective, conventional and classification of projection. • Understand and graphical construct the polyconic projection, international map projection, universal transverse Mercator (UTM) projection and mollweide projection.
G. G. 234 Regional Planning	• Understand the definition and concept of regional geography study about the principles and importance of Regional Geography. • Understand regional approach for the study regionalization and planning. • Understand theoretical structure of planning by central place theory, Growth pole Theory, and Gunnar mydal's cumulative causation. • Study about causes, effect of regional disparities and remedies on disparities. • Student presentations on any one topic related to regional geography with issues and solutions.
Semester-IV	
G. G. Human Geography	• Understand the relationship of man and environment • Study of human evolution and races of man kinds. • Understand the concept of Determinism, Posibilism and Stop and Go determinism. • Understand the modes of life of Bhill, gonad, Nagas and Tribes in India • Importance of Right to Information Acts. • Understand the history of population • Study of distribution and density of population. • Get knowledge of population theories. • Study types, cause, effects of migration.
G. G. 242 Geography of India	• Understand the about the physiographic division of India and Maharashtra. • Understand the India Drainage system of India Rivers

	• Understand the climatic variation in India and climatic region of India and Maharashtra. • Examine and understand the types of vegetation of India and Maharashtra. • Understand the variation in industrial development in India and Maharashtra. • Examine and understand the developed and underdeveloped states in India.
G. G. 243 Practical Geography (Surveying)	• Understand the topographical maps, its introduction, types, index, grid reference, and interpretation of topographical maps • Study the satellite imageries- introduction, calculation of geographical area, interpretation of satellite imageries. • Understand the aerial photographs- introduction, definition, types, geometry of aerial photographs, methods, measurement of geographical area, elements of photo interpretation using stereoscope. • Study and understand the techniques of surveying, using dumpy level and theodolite for practical, field work, research, and measurement and management of area.
G. G. 244 Remote Sensing and GPS Based Project Report	• Understand the all fundamental concept of GIS, potential of GIS, concept of space & time, objectives of GIS, elements of GIS, GIS tasks, history of GIS and GIS applications in Different field. • To examine and understand the spatial and non spatial data models and all its functions Components and applications in geography. • Extract the knowledge and information about geospatial analysis and database query and GIS data analysis the various concept and problems in analysed in GIS environment. • Understand the concept of map, projections, and coordinate systems and basic of the same for different purposes in geography. • GIS applied in the various kinds of fields, agriculture, populations, watershed planning and land use planning.
S.Y.B.Sc	
Semester-III	
G. G. 301 Environmental Geography	• Gain knowledge about concept, scope of environmental geography and components of environment. • Develop an idea about human-environment relationships. • Build an idea about ecosystem. • Know about environmental programmes and policies.
G. G.302 Physical Geography Of Maharashtra	• Understand the about the physiographic division of Maharashtra. • Understand the India Drainage system of Maharashtra Rivers • Understand the climatic variation in India and climatic

	region of Maharashtra • Examine and understand the types of vegetation of India and Maharashtra.
Subject –G. G. 303 Interpretation of Topographical Map and Weather Data Analysis (Practical)	• Know about Toposheets and its types • Understand the mechanism function of topographical maps. • Understand interpretation if weather images.
Semester-IV	
G. G.401 Human Geography	• Understand the relationship of man and environment • Study of human evolution and races of man kinds. • Understand the concept of Determinism, Posibilism and Stop and Go determinism. • Understand the modes of life of Bhill, gonad, Nagas and Tribes in India • Importance of Right to Information Acts. • Understand the history of population • Study of distribution and density of population. • Get knowledge of population theories. • Study types, cause, effects of migration.
G. G. 402 Socio-Economic Geography Of Maharashtra	• Understand the variation in industrial development in India and Maharashtra. • Examine and understand the developed and underdeveloped states in India.
G. G. 403 Surveying and Measurement By GPS	• Understand the topographical maps, its introduction, types, index, grid reference, and interpretation of topographical maps • Study the satellite imageries- introduction, calculation of geographical area, • Interpretation of satellite imageries. • Understand the aerial photographs- introduction, definition, types, geometry of aerial photographs, methods, measurement of geographical area, elements of photo interpretation using stereoscope. • Study and understand the techniques of surveying, using dumpy level and theodolite for practical, field work, research, and measurement and management of area.
T.Y.B.A.	
Semester-V	
G. G. 351 Environment Geography	• Gain knowledge about concept, scope of environmental geography and components of environment. • Develop an idea about human-environment relationships. • Build an idea about ecosystem. • Know about environmental programmes and policies.
G. G. Economic Geography	• Students Understand about the Nature and Scope, approaches of Economic Geography and recent trends of economic geography.

	• Understand about the basic Economic Processes- Production, Exchange, Consumption and its applications • Understand the fundamental theories in economic geography. • Review, understand and apply the modes of economics development by various models. • Compare the economic environment and economic development in the world. • Understand the economies scale, transportation and communication and nature and role of international trade in economic development of India.
G. G. 353 Practical in Human Geography	• Students understand the statically crop combination methods. • To evaluate and understand agricultural efficiency with various methods. • Evaluate the Data Analysis Techniques of measures network structure. • Understand & Draw Lorenz Curve and location quotient. • Understand population indices" and population projection Analysis • Applied and understand the data analysis techniques for rural and urban settlement and prepare the adequate maps, various Graphs.
G. G. 355 Disaster Risk Management	• Examining the introduction to disaster, nature, scope, significance, types and approaches to study. • Understand the fundamental concept of hazard, disaster, vulnerability, resilience and risk • Understand the various types and impact of natural and manmade hazards on human being, regional economy, nature etc. • Understand the role of local peoples, NGOs, police, army, paramilitary forces in disaster management • Study the previous disasters and their management happened in India
Semester-VI	
G. G. 361 Population Geography	• Understand the Nature and Scope of Population & Settlement Geography and their evolution, significance and approaches for the study. • Understand the settlement types, pattern and nature and process of urban settlement and some basic concept related to settlement geography. • Examine and understand the various factors responsible for World Population growth and Distribution. • To understand the fundamental Concepts Related to Population such as density, over, Optimum & under population, fertility, mortality and population for future Perspectives. • To review and understand the subject matter with the help

	of Theories of Population.
G. G. 362 Political Geography	• Build an idea about urban and rural settlements, and its relationship with environment and also different theories related to settlement geography. • Know about political geography.
G. G. 363 Practical in Physical Geography	• Understand the stream ordering methods of Stahlers and Harton and calculate the stream orders and bifurcation ratio • To study and understand the drainage basin analysis and prepare the slope map, dissection index map, relative relief map, absolute relief map • To understand and prepare the slope profile and their types and drawing the block diagram • To understand the Climograph, Hydhergraph Climate graph. • To understand and classify climatic region using Koppen‟s and Thornwaite climatic classification methods
G. G. 365 Sustainability and Development	• Identify and critically analyse the social, environmental, and economic dimensions of sustainability. • Develop a capacity for integrative thinking and practice. • Integrate theory, practice and reflection in the pursuit of a more sustainable world.

Department of English

F.Y.B.A	
Semester-I & Semester-II	
Course	**Outcomes (Students will be able to)**
Compulsory English Semester – I & II	• The course introduced tenses, synonyms, prepositions. • The students acquired interview skills and report writing as well as narration and summarizing skills. • Students got the knowledge about the short story and its types. • Students got the well information about the poetry, types and forms.
Optional English Semester – I & II	• Students were introduced the basic forms of literature • Students developed the liking for reading. • Students were inspired to develop their creative and expressive ability. • Student were acquainted with the major forms of literature- short story and poems • Students developed the capacity of understanding literature.
English Communication (Optional English)	• Students were introduced with writing and reading skills • Students were acquainted with the use of English language through different means. • Students were acquainted with the creative use of English

	language.
F.Y.B.A.	
Semester-I	
101 - English for Business...	• Students were introduced to the communication theory and various communication skills. • Students were introduced with various soft skills. • The oral and written competency in English of the students was improved. • Linguistic competency of the students was developed.
Semester-II	
102 (A) – A Local language (Business Legends, Optional English)	• Students were introduced with various famous entrepreneurs. • English reading and linguistic comprehension of the students was developed. • Students were acquainted with special challenges of starting new ventures. • Students got the qualities of a successful entrepreneur.
S.Y.B.A	
Semester-III & Semester-IV	
Communicative English (Optional English)	• Students were introduced with the new techniques of technical communication. • Students were trained to use English for specific purpose and situations in real life. • Students were inculcated the basic human values • The students were able to communicate in written and oral form. • Students were developed in research aptitude • Student we introduced of practical work
Compulsory English	• Students developed liking for English. • Students were made capable to comprehend and understand English. • Students could use English in practical situations. • Students could understand and appreciate select literary pieces.
DSE 1 A & B 16th and 17th century English Literature	• Students were acquainted with the major literary trends, tendencies and prominent writers of the 16th and 17th century English literature. • Students were made aware about the literary history, salient features and socio-cultural background of 16th and 17th century period. • Students were made enable to critically appreciate the texts. • The students developed the liking for Elizabethan and post Shakespearean literature.
DSE 2 A & B 18th and 19th century English Literature	• Students were introduced about the basic ideas of 18th and 19th century English literature. • Students were made aware about the literary history,

	salient features and socio-political and cultural background of romantic and Victorian age. • The students developed the liking for romantic and Victorian literature.
DSE 1 C & D The Study of Novel and Drama	• Students' developed the interest in reading and understanding novel and drama. • Students were acquainted with the major forms of drama and novel. • Students were introduced with the key terms in the study of novel and drama.
SEC 1 & 2 English for Competitive Examinations	• Students were enabled to prepare for competitive exams – specially for English language e.g. grammar, Vocabulary, comprehension and other important topics • Students were motivated to overcome the fear about English as a compulsory subjects in various competitive exams.
T.Y.B.A.	
Semester-V & Semester-VI	
Compulsory English CENG-351 & 361	• Students were introduced with short story and its types. • Students were made acquainted about the prose writing. • Students got the knowledge about poetry and its forms. • Students made the practice about presentation skills, public speaking, group discussion, essay writing and precise writing. • Students made the practice of progressive and perfect tenses and compound and complex sentences.
Special Paper – III ENG-352 & 362 Indian writing in English and American Literature	• Students were acquainted with the growth if Indian Drama and Novel in English during the 20^{th} century. • Students were enabled to evaluate, analyze, appreciate and criticize drama and novel. • Students were acquainted with social, political and cultural background and literary movements of 20^{th} century • Students were acquainted with the developments in American poetry and Novel.
Special Paper – IV ENG-353 & 363 The Study of English Language	• Students were introduced with the properties an functions of language. • Students were inculcated with the phonological competence. • English Grammatical forms and functions were acquainted to the students. • Students were introduced with morphological concepts and processes. • Students were introduced to the basic concepts in syntactic and semantic levels of language.
General Paper – III ENG-351 & 361 -	• Students were acquainted with the drama, dramatic art and aspects of drama.

The Study of Drama	• Students understood the development of English drama. • Students understood the study of drama systematically. • Students were acquainted with major English Dramatists.
M.A	
Semester-I & Semester-II	
A. PG-ENG-101: Basics Of Linguistics/ ENG-201: Applied Linguistics	Students were familiarized with the theory and practices of communication. 2. Students were acquainted with the nature of English phonetics and its application. 3. Students were introduced to the various theories and practices in linguistics and updated their knowledge towards recent trends in linguistics. 4. Students were made aware of the relation of language to brain, society and culture.
B. ENG-102: English Drama(Medieval to 17th century)/ ENG-202: English Drama(18th,19th century)	1. Students were acquainted with various types of drama. 2. Students were introduced with the contribution o0f different playwrights in developing various types of drama. 3. Students were familiarized with various dramatic techniques and devices
C. PG-ENG-103: English Poetry (Chaucer to Romantic Period), ENG-203 – English Poetry(Victorian to Post Modern Period)	1. Students were introduced with the contribution of various poets to English poetry. 2. Students were acquainted with the form, language, subject and poetic devices used in prescribed poems. 3. Students were oriented with the skill of creative writing through the prescribed poems.
D. PG-ENG-104(A): (Poetry, drama) , ENG-204(A) Indian Writing in English (Novel)	1. Students were acquainted with the growth and development of Indian poetry, drama, novel. 2. Students were familiarized with ethos and university of issues depicted in Indian Writing in English. 3. Students were facilitated with trends, techniques and tendencies depicted in Indian Writing in English.
E. AC 101 : Practicing Cleanliness	1. Students were made aware of Clean India Mission and inculcated cleanliness practices among them.
Semester-III & Semester-IV	
English - Core Paper ENG 231 and ENG 241 – Literary Theory and Concepts	• Students introduced to a wide range of critical methods, literary theories and concepts. • Students made enabled to use the various critical approaches and advanced literary theories. • Students were got familiarized with the trends and cross-disciplinary nature of literary theories. • Students made enabled to use various critical tools in the analysis of literary and cultural texts.

English - Core Paper ENG 232 and ENG 242 – English Novel	• Students were acquainted with the growth and development of English novel. • Students were acquainted with the contribution of the novelists to the Genre. • Students made enabled to understand the different aspects of novel in different social and cultural contexts. • Students understood the human values, psyche and issues raised in the representative novels. • Students were got familiarized with verities of English through the reading of the prescribed novels.
English - Core Paper ENG 233 and ENG 243 – Basics of Research in English Language and Literature	• Students were acquainted with the term 'research' • Students introduced with the basic elements of research in English language and English literature. • Students were got familiarized with difference in the research of English language and literature. • Students were acquainted with nature, aspects, types and areas of research in English language and literature. • Students were acquainted with research questions, methods and framing of outlines.
English – Optional Paper ENG 234(B) and ENG 244 – American Literature	• Students were acquainted with selected masterpieces in American Literature. • Students were acquainted with the development of different genres in American Literature. • Students made aware about social, political and cultural issues reflected in American Literature. • Students introduced with the trends and tendencies in American Literature.

Department of Marathi

F.Y.B.A	
Semester-I & Semester-II	
Course	**Outcomes (Students will be able to)**
SEM-I &II Mar-G-111&121-A&B विशिष्ट वांग्मय प्रकाराचा अभ्यास कथा व कविता (810211& 810212)	1) मराठी साहित्य संबंधी रुची निर्माण होते. 2) वांग्मयीन अभिरुचीचा विकास होतो. 3) कथा कविता या साहित्य प्रकाराचे स्वरूप प्रकार घटक ओळख होते. 4) भाषिक कौशल्य विकास होतो.
F.Y.B.Sc.	
Semester-I & Semester-II	
F.Y.Bsc Marathi- SEM-I & II Mar1 A & B कथा आणि संवाद कौशल्ये यांचा अभ्यास (810201&820201)	1) कथा या साहित्यप्रकाराची ओळख करून घेतो. 2) भाषिक कौशल्यांचा विकास होतो. 3) भाषा व्यवसायाचे औपचारिक आणि अनौपचारिक क्षेत्रनिहाय स्वरूप समजते.
F.Y.B.Com.	

Semester-I & Semester-II	
F.Y.B.Com. Marathi SEM-I&II 102B&202B मराठी (811022&812022)	1) भाषेच्या माध्यमातून व्यवसाय व उद्योग क्षेत्रातील व्यक्तिमत्त्वाचा परिचय होतो. 2) उद्योग व व्यापाराची माहिती घेतो. 5) विद्यार्थी लोकरंगभूमीच्या सत्यशोधकी जलसे आणि आंबेडकरी जलसे या आधुनिक रुपाची स्वरूप व वैशिष्ट्ये जाणून घेतो.
S.Y.B.A	
Semester-III & Semester-IV	
S.Y.B.A. Marathi Gen2. SEM-III &IV Mar-231-A & 241 A मराठी वैचारिक गद्य लेखनाचा अभ्यास, मराठी चरित्र-आत्मचरित्र पर लेखनाचा अभ्यास (830211&840211)	1) कादंबरी या वांग्मय प्रकाराची ओळख करून होते. २) साहित्यकृतीचे आकलन आस्वाद आणि मूल्यमापन करण्याची क्षमता विकसित होते. 3) चरित्र -आत्मचरित्र या साहित्य प्रकारांच्या तात्विक घटकांचे ज्ञान करून घेतो. 4) साहित्य विषयाची अभिरुची निर्माण होते.
S. Y. B. A. Marathi Spl -1 SEM-III &IV Mar232 &242 आधुनिक वांग्मय प्रकार कादंबरी व कविता(830202&840202)	1) कादंबरी व काव्य या साहित्यप्रकाराची ओळख होते. 2) साहित्यकृतीचे आकलन आस्वाद आणि मूल्यमापन करण्याची क्षमता विकसित होते.
S. Y. B. A. Marathi Spl S2. SEM-III &IV Mar-233&243साहित्यविचार भारतीय आणि पाश्चात्य(830203&840203)	1) विद्यार्थी मराठी साहित्यातील सिद्धांत संकल्पना व स्वरूप यांचे ज्ञान प्राप्त करतो. २) साहित्याचे स्वरूप समजून घेतो. 3) वांग्मयीन मूल्यांचा परिचय होतो. 4) साहित्याची प्रयोजने समजून घेतो . 5) साहित्यनिर्मितीची तत्व जाणतो.
S. Y. B. A. Marathi MIL. SEM-III &IV Mar236&246 मुद्रित माध्यमांसाठी लेखन, श्राव्य माध्यमांसाठी लेखन व संवाद (830208&840208)	1) मुद्रित माध्यमातील विविध कौशल्य आत्मसात करतो. 2) प्रसार माध्यमातील लेखन कौशल्य विकसित करतो. 3) प्रसारमाध्यमात सेवेची संधी मिळविण्यासाठी भाषिक क्षमता विकसित होते. 4) वृत्तपत्रांची प्रक्रिया जाणून घेतो. 5) प्रसारमाध्यमांचे समाजातील महत्त्व जाणतो. 6) नभोवाणी चे समाजातील महत्त्व जाणतो. 7) मुलाखत लेखनाचे तंत्र व कौशल्य विकसित होते.
S.Y.B.A.Marathi SEC. SEM-III &IV Mar-234&244 लेखन कौशल्य मुद्रितशोधन आणि सर्जनशील लेखन (830207&840207)	1) लेखन कौशल्य यांचा विकास 2) लेखन विषयक नियम व विरामचिन्हे याबद्दल माहिती मिळते 3) सर्जनशील लेखनाची प्रेरणा निर्माण होते.
S.Y.B.Sc.	

Semester-III & Semester-IV	
S.Y.Bsc. MAR- SEM-III&IV विज्ञान कथा आणि नोंद लेखन, विनोदी कथा आणि विज्ञानपर लेखन (830201&840201)	1) विज्ञान कथा व विनोदी कथा या वांग्मय प्रकाराचा परिचय होतो. 2) वैज्ञानिक संज्ञा संकल्पना बाबत विज्ञान कोशासाठी नोंद लेखन विकसित होते. 3) विज्ञानाच्या क्षेत्रातील विविध विषयावर लोकोपयोगी लेखन करण्याचे कौशल्य आत्मसात होते.
T.Y.B.A.	
Semester-V & Semester-VI	
T.Y.B.A.Marathi Gen3. SEM-V & VI Mar-351A & 361A वांग्मय प्रकाराचा अभ्यास नाटक व ललित गद्य (350211&360211)	1) नाटक या वांग्मय प्रकाराची ओळख होते. 2) साहित्यकृती बद्दलची अभिरुची विकसित होऊन कलाकृतीचा आस्वाद घेण्याची क्षमता विकसित होते. 3) ललित गद्य या साहित्यप्रकाराची तात्विक विवेचन आत्मसात करतो. 4) एकांकिका या नाट्य प्रकाराची ओळख होते. 5) स्त्री विषयक निवडक ललित गद्य लेखनाचा अभ्यास होतो.
T.Y.B.A.Marathi Spl S3. SEM-V & VI Mar-352 &362 आधुनिक मराठी वांग्मयाचा अभ्यास (350244&360244)	1) मराठी साहित्याचे स्वरूप संकल्पना परंपरेचे ज्ञान प्राप्त करून घेतो. 2) विशिष्ट कालखंडाच्या पार्श्वभूमीवर साहित्यामागील प्रेरणा प्रवृत्तीचे ज्ञान करून घेतो. 3) भाषेचे यथोचित आकलन करून तिचा वापर करण्याची क्षमता विकसित होते. 4) साहित्य प्रकाराच्या विकसनशील परंपरेचे स्थूल ज्ञान करून घेतो. 5) कादंबरी व काव्य या साहित्यप्रकाराची ओळख होते.
T.Y.B.A. Marathi Spl4. SEM-V&VI Mar353&363 मराठीचा भाषिक अभ्यास व मराठी व्याकरण (350277&360277)	1) भाषेचे स्वरूप कार्य भाषेच्या अभ्यासाचे महत्त्व ,भाषेच्या प्रमुख अंगांचा परिचय करून घेतो. 2) भाषेचे मानवी जीवनातील कार्य व महत्त्व जाणून घेतो. 3) मराठी भाषेचा ऐतिहासिक परिचय होतो. 4) स्वननिर्मितीची प्रक्रिया समजून घेतो 5) शुद्धलेखनाचे नियम समजावून घेतो

Department of Hindi

F.Y.B.A	
Semester-I	
Course	**Outcomes (Students will be able to)**
DSC HINDI A-1	• हिंदी भाषा एवं साहित्य की सम्यक जानकारी प्राप्त करना। • हिंदी भाषा एवं साहित्य के अतीत, वर्तमान एवं भविष्य को परख करना। • छात्रों के चिंतन क्षितिज का विस्तार करना।

	भाषिक समृद्धि एवं अभिव्यक्ति कौशल के माध्यम से व्यक्तित्व का संपूर्ण विकास करना। • रचनात्मक शक्ति एवं लेखन कला का विकास करना। भाषिक सम्प्रेषण, योग्यता संवर्द्धन तथा कोशल विकास आत्मसात करना। • भाषा की व्यावहारिक उपयोगिता का ज्ञान प्राप्त करना।
Semester-II	
DSC HINDI A-2	• हिंदी भाषा के छात्रों को काव्य विषय में रुची बढाना | • पद्य विधा को विशेषताओं के साथ परिचित कराना | • छात्रों को कविता लेखन में रुची उत्पन्न कराना | • गद्य और पद्य में अंतर समझाते हुये पद्य में रुची उत्पन्न करना|
S.Y.B.A	
Semester-III	
DSC-1 (C) A HINDI: कथेत्तर गद्य विधाएँ (G -2)	• कथेत्तर गद्य विधा का विकासात्मक परिचय प्रस्तुत कराना • कथेत्तेर गद्य विधा की कालयजी रचनाओं से छात्रों को परिचीत कराना • कथेत्तेर गद्य विधा कि रचनाओके माध्यम से छात्रो में मूल्य संवर्धन कराना। • कथेत्तेर गद्य विधा कि रचनाओं के माध्यम से छात्रो में सामाजिक संवेदनशीलता को बढावा देना
DSE (A) Hindi काव्यशास्त्र	• काव्य शास्त्र का सामान्य परिचय होगा • काव्य कि विविध विधाओ से छात्र परिचित होंगे • अलंकारो का परिचय होंगा • व्याकरनिक दृष्टी से सुधार होंगे
DSE-II (A) HINDI : उपन्यास विधा	• हिंदी उपन्यास विधा का विकासात्मक परिचय कराना। • हिंदी के प्रमुख उपन्यासकारों का सामान्य परिचय देना। • निर्धारित उपन्यास के माध्यम से छात्रों को मानवीय जीवन में समय का महत्व, व्यक्ति की विश्वव्यापीपी स्वाधीनता, वृध्दों की समस्या मूल्य संवर्धन, संयुक्त परिवार आदि से अवगत कराना। • उपन्यास के माध्यम से सामाजिक उत्तरदायित्व के प्रति छात्रों में एहसास जगाना
SEC-1 HINDI: भाषिक संप्रेषण (SKILL)	• हिंदी भाषा के भाषिक स्वरूप में छात्रों को परिचित कराना। • भाषीक संप्रेषण की सैद्धांतिकी से छात्रो को परिचित कराना। • संप्रेषण के प्रमुख प्रकारों से छात्रो का परिचय कराना • मौखिक संप्रेषण के विविध रूपों से छात्रो को अवगत कराना ।

	• लिखित संप्रेषण के विविध रूपो से छात्रो को अवगत कराना
MIL HIN 236 लेखन कौशल :मिडिया एव साहित्य	• छात्र रत्नात्मक लेखन के सैद्धांतिक से अवगत होंगे • अभी व्यक्ती से विविध शेत्रो से छात्र परिचित होंगे • रत्नात्मक लेखन के विविध रूपो से छात्र परिचित होंगे • हिंदी लघुकथाओ के माध्यम से लखन कि सर्जन प्रक्रिया से अवगत होंगे • हिंदी लघुकथाओ के माध्यम से मानवी मुल्यो का सरक्षण होंगा
Semester-IV	
DSC-1 (D) A-HINDI: श्रेष्ठ हिंदी एकांकी	• एकांकी विधा का विकासात्मक परिचय कराना। • प्रमुख एकांकीकारोका का सामान्य परिचय प्रस्तुत करना। • एकाकियों के माध्यम से रंगमंचीय प्रभाव को विशद कराना
DSE (B) Hindi काव्यशास्त्र	• काव्य शास्त्र का परिचय होगा । • गद्य कि विविध विधाओ से छात्र परिचित होंगे । • शब्द शक्ती ओ का परिचय होगा । • आलोचना कि क्षमता विकसित होगी । • छद एवम रसो का परिचय होगा ।
DSE-II (B) HINDI: नाटक विधा	• हिंदी नाटक विधा का विकासात्मक परिचय देना • हिंदी नाटक और रंगमंच के परस्पर संबंधों पर प्रकाश डालना। • भरती आबा नाटक के माध्यम से आदिवासी समाज का चित्रण करना • आदिवासी साहित्य और संस्कृति से छात्रों को परिचित कराना।
SEC-II HINDI: अनुवाद विज्ञान	• अनुवाद विज्ञान को प्रविधि से छात्र को अवगत करांना • अनुवाद विज्ञान की सैद्धांतिक विवेचन करना • साहित्यिक अनुवाद मशीनी अनुवाद से छात्रों को अवगत कराना
MIL-1 Hindi लेखन कौशल मीडिया एवं साहित्य (लघुकथा)	• छात्रों को रचनात्मक लेखन के सैध्दांतिकों से अवगत कराना। • अभिव्यक्ति के विविध क्षेत्रों से छात्रों का परिचय करवाना। • रचनात्मक लेखन के विविध रूपों से छात्रों को परिचित कराना। • हिंदी लघुकथाओं के माध्यम से रचनात्मक लेखन की सर्जन प्रक्रिया को दर्शाना। • हिंदी लघुकथाओं के माध्यम से मानवीय मूल्यों का संवर्धन एवं संरक्षण करना।
T.Y.B.A.	
Semester-V	
HINDI 351 A सामान्य हिंदी (G3)	• एकांकी विधा के सैद्धांतिक विवेचन से छात्रों को अवगत कराना। एकांकी विधा के विकासात्मक परिचय से छात्रों को परिचित कराना।। • एकांकी विधा के प्रमुख साहित्यकार तथा उनके एकांकी विधा का ज्ञान छात्रों को प्रदान करना।

	• लेखन व्याकरण तथा पारिभाषिक शब्दावली के माध्यम से छात्रों में यात्रा साहित्य लेखन की कला से परिचित कराना।
हिंदी साहित्य का इतिहास (S- 3) (आदिकाल, भक्तिकाल और रीतिकाल)	• हिंदी साहित्य का काल विभाजन तथा नामकरण से छात्रों को अवगत कराना। • आदिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाओं से छात्रों को परिचित कराना। • भक्तिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाकारों से छात्रों को परिचित कराना। • रीतिकालीन साहित्य की प्रमुख परिस्थितियों, प्रवृत्तियों तथा प्रमुख रचनाकारों की रचनाओं से छात्रों को परिचित कराना।
HIN – 353 भाषा विज्ञान तथा राष्ट्र भाषा आंदोलन का इतिहास (S- 4)	• भाषा के परी भाषाओ तथा विशेषताओ से छात्र परिचित होंगे • भाषा के विविध रूपो का ज्ञान छातत्रो को प्राप्त हो जाएगा • भाषा के विविध बोलीओ से छात्र परिचित होंगे • भाषा के उत्पत्ती विषय सिद्धांत से छात्र परिचित होंगे • हिंदी भाषा के विकास में खान्देश के योगदान से छात्र परिचित होंगे • भाषा के विकास में विविध संस्थाओ के योगदान से छात्र परिचित होंगे सेट,नेट,तथा स्पर्धा परीक्षाओ कि पूर्व तयरी हेतू यह पाठ्यक्रम उपयोगी सिद्ध होंगा
Semester-VI	
HINDI 351 A सामान्य हिंदी (G3)	• छात्रों को हिंदी भाषा की व्याकरणिक संरचना से अवगत कराना। • छात्रों को हिंदी शब्द संसाधन से परिचित कराना। • छात्रों को संक्षेपण करने की प्रक्रिया से अवगत कराना। • छात्रों को पल्लवन करने की प्रक्रिया से अवगत कराना। • वक्तृत्व कला-कौशल की जानकारी से छात्रों को परिचित कराना। • वाद-विवाद कला कौशल की जानकारी से छात्रों को परिचित कराना।
हिंदी साहित्य का इतिहास पाठ्यक्रम का स्वरूप	• भाषा की परिभाषाओं तथा विशेषताओं से छात्रों को अवगत कराना। • भाषा के विविध रूपों का ज्ञान छात्रों को प्रदान करना। • विविध बोलियों के सामान्य परिचय से छात्रों को परिचित कराना। • भाषा के व्युत्पत्ति विषय सिध्दांत से छात्रों को परिचित कराना। • हिंदी के प्रचार एवं प्रसार में खान्देश के साहित्यकारों के योगदान से छात्रों को अवगत कराना।

	• हिंदी के प्रचार एवं प्रसार में विविध संस्थाओं के योगदान को उजागर करना।
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HIN - 363 भाषा विज्ञान तथा राष्ट्र भाषा आंदोलन का इतिहास (S- 4)	• भाषा विज्ञान कि परीभाषाये तथा भाषा विज्ञान के विविध अंगो से छांत्र परिचित होंगे • इस पाठ्यक्रम को पढकर भाषा विज्ञान तथा व्याकरण का तुलनात्मक ज्ञान छांत्रो को प्राप्त होंगा | • ध्वनी विज्ञान के सबंधित विविध मुद्डो का ज्ञान छात्रो को प्राप्त हो जाएंगा • पद विज्ञान के सबंधित विविध मुद्दो का ज्ञानन छात्रो को प्राप्त होंगा | • अर्थ विज्ञान के सबंधित विविध मुद्दो का ज्ञान छात्रो को प्राप्त हो जाएंगा • यह पाठ्यक्रम सेट / नेट तथा स्पर्धा परीक्षाओ कि पूर्व तयारीओ के दृष्टी से उपयोगी सिद्ध होगा |

Department of History

F.Y.B.A	
Semester-I & Semester-II	
Course	**Outcomes (Students will be able to)**
Sem. I (HIS – DSC A 1) HISTORY OF INDIA (1857-1950) & Sem. II (HIS – DSC A 2) HISTORY OF INDIA (1857-1950)	• This Syllabus covered an important topic of History of India (1857 to 1950). • Developed an interest in student to study the history as discipline. • Developed positive attitude and appreciate contribution of freedom fighters towards the independence of India. • Created patriotism and nationalism among the students. • The students were made aware with the historical perspectives of the freedom movement and spirit of national integrity. • The syllabus was useful for the preparation of the competitive examinations.
S.Y.B.A	
Semester-III & Semester-IV	
Sem. III DSC-HIS-231: History of the Marathas (A.D.1605-1750 A.D.) & Sem. IV DSC - HIS - 241: History of the Marathas (A.D.1605	• Created and enhanced interest about regional History among the students. • Students got the information about how Shivaji Maharaj established the empire in adverse condition. • The syllabus was useful for the preparation of the competitive examinations.

- A.D 1750)	
Sem. III DSE-HIS-232: History of United States of America (A.D.1776 - A.D. 1945) & Sem. IV DSE - HIS - 242: History of United States of America (A.D. 1776 -A.D.1945)	▪ Students understand the importance of America (USA) in the world history. ▪ Students studied the foreign policy of America (USA). ▪ Students were made aware about the role of America (USA) in world politics. ▪ Students studied the role of America between two world wars. ▪ We focused on the Human Rights Movement in America (USA).
Sem. III DSE-HIS-233: History of Ancient India (B.C 3000 to B.C 600) & Sem. IV DSE-HIS-243: History of Ancient India (B.C 600 - A.D 1206)	• Students were acquainted with different sources of Ancient Indian History. • Students were made aware about the Political, Socio-Economic and Cultural Developments in the Ancient Period. • Students studied the rich Cultural Heritage in India. • Students surveyed the Sources of History of Ancient India.
Sem. III SEC-HIS-234: Research Methodology in History	• Students were provided adequate conceptual base and they got better understanding of history and its forces, • Students were developed in terms of research-formulating hypotheses, developing broad frames of interaction with other social sciences. • Students attained certain level of Interdisciplinary approach.
Sem. IV SEC-HIS-244: An Introduction to Archives in India	• Created awareness among the students about the role of Archives in the preservation of Heritage. • Introduced the importance of Archives in study of History. • Created awareness to conserve the historical records in their local areas. • Created interest of students to pursue career in the field of Archives. • Students encouraged to visit Archives, and they were visited the Archives of Gandhiteerth, Jalgaon
T.Y.B.A.	
Semester-V & Semester-VI	
Sem. V HIS (G-3) 351 - HISTORY OF MODERN WORLD (1789-1900) & Sem. VI HIS (G-3) 361 : HISTORY OF MODERN WORLD (1901-1945)	• Students were understand the concept and meaning of the `History of Modern World`. • Introduced the various perspectives of the History of modern World. • The syllabus was useful for the preparation of the competitive examinations. • Students were inculcated with Liberty, Equality and fraternity.
Sem. V HIS (S-3) 352 (B)	• Created and enhanced interest about regional History among the students.

EXPANSION OF THE MARATHA POWER (1707-1761) & Sem. VI HIS (S-3) 362 (B) : EXPANSION AND FALL OF THE MARATHA POWER (1761-1818)	• Students got the information about how establishment and Downfall of the Maratha Empire. • Students motivated for research work of the Maratha History
Sem. V HIS (S-4) 353 : HISTORY OF SULTANAT (1206-1526) & Sem. VI HIS (S-4) 363 : HISTORY OF THE MUGHALAS (1526-1707)	• Students got information about the Political, Socio-Economic and cultural condition of Medieval India. • Students understood in detail the agricultural, trade and commerce, position of women and religious condition in medieval period. • The syllabus was useful for the preparation of the competitive examinations.

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Department of Economics

F.Y.B.A	
Semester-I & Semester-II	
Course	**Outcomes (Students will be able to)**
Paper – Principles Of Microeconomics. Paper Code Eco-G-101(A) Sem1st Eco-G-201 Sem 2nd.	• Introduced The Students to the basic Principles of Microeconomics Theory. • To introduced the student Behaviour of consumer, Producer in Economics and Price Determination in Market. • How to Microeconomics Concept Can Be Applied to Analyze Real life Situation.
F.Y.B.Com.	
Semester-I & Semester-II	
203 Micro Economics	• Enabled to the Students to have understanding about the various issues of Micro Economy. • Developed analyzing capability of various market selling & purchasing cost. • Students got the knowledge various concept of marketing. • Students got the idea about business & various Jobs.
S.Y.B.A	
Semester-III & Semester-IV	
DSC-ECO-231C Indian Economy Since 1980- I DSC Sem-III & Sem- IV 241-D(Genaral	• Enabled to the Students to have understanding about the various issues of Indian Economy. • Developed analyzing capability of Indian Economic Problem. • Motivated the Students for competitive Examinations

Paper II)	
DSE- ECO-232 A Agricultural Economics- I DSE Sem- III & Sem- IV 242 B –II (Special Paper – I)	• Students were introduced to Agricultural Economics & industry. • Students got knowledge of land holding & organization. • Students got the information about the risk & uncertainly in Agriculture.
Paper Title- Advance Macro Economics sem1st and 2nd. S.Y.B.A Paper course – DSE ECO 233A and DSE ECO-243B	• Understand macro economic analysis • Understand of national income • Understand classical & Keynesian theories of output and employment • Understand consumption & Investment function • Understand process of credit creation by commercial banks • Understand Quantity theory of money. • Understand various macroeconomic problems. • Understand various macroeconomic policies.
SEC-ECO-234 Research methodology for Economics – I SEC Sem- III & Sem-IV 244 (Skill Paper)	• Students were introduced about the research in Economics. • Students got the idea about the research design. • Students got the knowledge about data collection & data analysis.
S.Y.B.Com.	
Semester-III & Semester-IV	
S.Y.B.Com Sem1st Papercode 302 , Sem2nd Papercode402. Paper Title Macroeconomics .	• Identifying the basic concepts and theories of Macro economics. • Awareness about changing macro economics policies and theories. • Understanding various concepts such as; GDP, GNP NNP, Personal Income, Disposable Income, Per Capita Income, and National Income. • Identifying the factors determining gross domestic product, employment, the general level of prices, and interest rates. • Realizing the law of markets, consumption function and investment function. • Judging the role of fiscal policy and monetary policy in a Developing economy. • Knowing features, phases and theories of trade cycles.
T.Y.B.A.	
Semester-V & Semester-VI	
ECO-351 Indian Economics Since 1980- III Sem-V & Sem- IV 361 (General Paper III)	• Enabled the students to have understanding the various issues of the Indian Economy. • Developed the analyzing capability of the students about the current Indian Economic problems. • Motivated students for appearing competitive Exams.

T.Y.B.A -DSE 3A-Eco Sem 1st Paper Code 352 Sem2nd Paper Code 363 Paper Title Economics Of Public Finance and Policies.	• Understand Functions and Role of Government in Economy and Meaning, Nature, Scope & Importance's of public finance. • To understand various Approaches about Role of Government and Principle of Maximum Social Advantage- Dr. Dalton. • Understand concept of public expenditure • Understand concept of public revenue • Understand incidence & approaches of taxation • Understand concept of public debt • Understand concept of budget & deficit finance • Understand taxation & public debt of India • Understand fiscal federalism in India
ECO-353 A-International Trade & Practices – I Sem-V & Sem-VI 263A-II (Special Paper-IV)	• Enabled to the students to have understanding about the various issues of International Trade & Practices. • Developed the students analyzing capability in of International Trade & Practices. • Motivated the students for appearing competitive Exams.
T.Y.B.Com.	
Semester-V & Semester-VI	
Compulsory paper code sem1st 501 Sem2nd 601. Paper Title Indian Economics Scenario.	• Understanding characteristics, features, structural changes in Indian Economy. • Comprehension of the nature and impact of New Economic Reforms on the Indian Economy. • Knowing the problems of unemployment, poverty, rising economic and social inequality and problems of regional imbalances in India. • Evaluating the changing role of agriculture, industrial and service sector and foreign sector in Indian Economy. • Measuring the problems and prospects of cottage and small scale industries, and industrial sicknesses. • Measuring the growth, volume, composition and direction of India's foreign trade and capital inflow since 1991.

Department of Politics

F.Y.B.A	
Semester-I	
Course	**Outcomes (Students will be able to)**
C.C. POL . G. 101 A, Paper – I Indian Constitution	• The Students understood working of Indian Constitution. • Students got knowledge about liberty and justice • Students got The Information about recent trends in Indian Democracy**.**

Semester-II	
C.C.Pol. G – 201 . B. Paper – II – Indian Government	• Students understood union, state Government and legislature. • Students got information about judiciary and Constitutional Commission. • Students got the Knowledge about Centre and state relation and Civil Serviecs.
S.Y.B.A	
Semester-III	
Pol-232 Pol. DSE 1-A. Reading Mahatma Gandhi	• Students understood the basic fundamental Concepts of ethics, Values, Humanity, Culture, Faith, truth, and Satyagraha. • Students got the actual Meaning of Ahimsa, Peace, Social harmony. • Students are Motivated to do research in Gandhi an Philosophy.
Pol-233 Pol.DSE 2 – A. Government and Politics of America.	• Students understood the what elements are useful for development and low American Government is working in Constitutional Frame work. • Students understood History, rights, administration and politics of America • Students Compared America and China.
POL-231 Pol.DSC - 1-C Introduction to Administration of Maharashtra.	• Students got necessary information about History and administration of Maharashtra. • This paper is useful for G.K. and Competitive exams
POL-l. SEC – I(02) Introduction of Research Methodology in Political Science	• Students learnt Main concepts and Methodology of research in Political Science • Students are Motivated to take research work.
Semester-IV	
Pol.242 DSE-1-B – Reading Dr,Ambedkar	• Students learnt Main Concepts and Philosophy of Dr.Ambedkar's work and ideology and its need. • Students' ability is enhanced for thinking different ways with Human kind and values.
Pol-243 DSE 2 B- Government and politics of China.	• Students understood that what elements are useful for development and How China Government is working. • Students learnt history , rights and administration and polities of China .
Pol.241 DSE – ID. Introduction to local and district administrations of Maharashtra.	• Students discussed a bunt loeal and district administrations of Maharashtra. • Students Motivated to appear of for Competitive exams.

T.Y.B.A.	
Semester-V	
Pol – 351 A . G . 3 Personal Administrations and Management.	• Students got the concept of Personal administration and training.
POL 352 (s.3) Western political Thoth	• Students understood the political thoughts theories and idealism of Plato, Aristotle, Machiavelli, john cock
Pol.353 (S.3) Modern Political Analysis	• Students understood nature and scope of modern political analysis • Students got information about approaches and Inunctions of political system. • Students got Knowledge about political Socialization. • Students got the information about nature and Scope of political culture
Semester-VI	
Pol – 361 A . G . 3 Personal Administrations and Management	• Students got the knowledge about Management, Administrative leadership, policy formation and Co – ordination
POL /362 (s.3) Western political Thoth	• Students understood the political thoughts theories and idealism of cock, Kars Marks, John Stuart mill, john Raw is, Harold Laski.
Pol. 354 (S.4) Modern Political Analysis	• Students got the information about political Participation and it s factors. • Students go the knowledge about political elites and leadership. • Students got the information about political Communication and role of media and press.

Department of Psychology

F.Y.B.A	
Semester-I	
Course	**Outcomes (Students will be able to)**
Foundation of psychology (PSY-101)	• To impart knowledge of the basic concept and modern trends in psychology. • To relate the fundamental principles of psychology in everyday life. • To make the students aware of the application of psychologycal concepts in various fields.
Semester-II	
Introduction to social psychology (Psy-201)	• To understand the basic of social psychology and to understand the the individual in the social world. • To make the students aware of the application of various

	concepts in social psychology in the Indian context.
S.Y.B.A	
Semester-III	
Human development psychology – Early Life (PSY-231C)	• To equip the learner with an understanding of the concept and process of human development across the life span. • To impart and understanding of the various domains of human development.
Semester-IV	
Human development psychology -later life (PSY - 241 D	• Introduce students to the concept, theories, and research which define this discipline of psychology. • develop the students capability of connecting discipline contents to personal value and behaviour. • provide and understanding of the explain issue underlying lifespan development.
T.Y.B.A.	
Semester-V	
management of interpersonal relations (PSY 351)	• To developed the skills of positive interpersonal communication. • To impart and understanding of the various domains of human relationships and process adjustment. • **To** develop the good decision making to career choice.
Semester-VI	
Adjustment in a life span (PSY 361)	• To impart and understanding of the self- concept and self-esteem. • To develop the skills of coping with stress. • To understanding the effects of habits to lifestyle

Commerce

Department of Commerce

F.Y.B.Com.	
Semester-I	
Course	**Outcomes (Students will be able to)**
Financial Accounting & Costing (811040)	• To enable the students to learn principles & concepts of Accountancy. • To encourage the students about maintain the books of Account for further reference. • To students are enabled with the knowledge in the practical application of Accounting. • To enable the students knowledge of Business Accounting.
Computing Skills & Quantitative	• To give the students Basic knowledge of M. S. office. • Introduction of Computerized Accounting to students.

Techniques. (811050)	• To aware Skills of computerized Accounting.
Modern office Management. (811061)	• To aware the students need of Modern office. • To aware the students Benefits of Modern office. • To aware the students various types of offices. • To aware the students a modern Equipment & machinery used in Offices.
Principles & Practices of Banking (811071)	• To aware the students of Banking system. • To build up capability of students for knowing Banking concepts & operation. • To make understandable to the students regarding the new concept in Banking system. • To aware the students about resents trends in banking system.
Semester-II	
Financial Accounting & Costing (812040)	• To enable the students to learn principles & concepts of Accountancy. • To encourage the students about maintain the books of Account for further reference. • To students are enabled with the knowledge in the practical application of Accounting. • To give the knowledge of Business Accounting.
Quantitative Techniques. (812050)	• To aware the commerce students about Statistics. • To clear basic concepts of Statistics. • To prepare students to learn to apply commonly used logic in Commerce
Modern office Management. (812061)	• To aware the students need of Modern office. • To aware the students Benefits of Modern office. • To aware the students various types of offices. • To aware the students a modern Equipment & machinery used in Offices.
Principles & Practices of Banking (812071)	• To aware the students of Banking system. • To build up capability of students for knowing Banking concepts & operation. • To make understandable to the students regarding the new concept in Banking system. • To aware the students about resents trends in banking system.
S.Y.B.Com.	
Semester-III	
Business Skills (823010)	• To Builds up the conceptual, analytical & managerial skills of students. • To develop employability skills among the students. • To aware the about recent changes in Business Environment. • To aware the students Leadership.
Business & Tax	• To aware the students about Indian Contract Act, Sales of

Laws. (823030)	Goods Act, Consumer Protection Act, • To Orients about the legal aspects of Business. • To provides an overview of the basic concepts relating to Industrial Law.
Corporate Accounting. (823040)	• To Introduction of corporate Accounting. • To enlighten the students on the accounting procedures follow by the Companies. • To students skills about Accounting standards. • To develop solve the practical problems.
Computing Management (823050)	• To aware the students about Tally ERP. • To give full practical knowledge of Computerized Accounting. • To give knowledge of Goods & Service Tax.
Business Entrepreneurship. (823061)	• To discern distinct entrepreneurship. • To Identify the parameters to assess opportunities and constraints for new business ideas; • To Develop a business idea by adopting systematic process; • To create a new Business Plan.
Modern Banking & Financial System. (823071)	• To give the students and understanding of the operations and developments financial system. • To clear resent concepts in Banking sector. • To know structure of Financial system. • To study impact of Banking sector on Economy
Semester-IV	
Business Skills (824010)	• To Builds up the conceptual, analytical & managerial skills of students. • To develop employability skills among the students. • To aware the about recent changes in Business Environment. • To aware the students Leadership.
Business & Tax Laws. (824030)	• To aware the students about Indian Contract Act, Sales of Goods Act, Consumer Protection Act, • To Orients about the legal aspects of Business. • To provides an overview of the basic concepts relating to Industrial Law.
Corporate Accounting. (824040)	• To Introduction of corporate Accounting. • To enlighten the students on the accounting procedures follow by the Companies. • To students skills about Accounting standards. • To develop solve the practical problems.
Cost Accounting. (824050)	• To impact knowledge of various cost. • To calculate various of labour. • To introduction to marginal costing.
Business Entrepreneurship. (824061)	• To discern distinct entrepreneurship. • To Identify the parameters to assess opportunities and constraints for new business ideas; • To Develop a business idea by adopting systematic

	process; • To create a new Business Plan.
Modern Banking & Financial System. (824071)	• To give the students and understanding of the operations and developments financial system. • To clear resent concepts in Banking sector. • To know structure of Financial system. • To study impact of Banking sector on Economy.
T.Y.B. Com.	
Semester-V	
Principles & Practices of Auditing. (835020)	• To clear fundamental concepts of Auditing. • To give knowledge about preparation of various types of Audit. • To aware students about Functions, Duties & Responsibilities. • To motivate students to admission to Chartered Accountants.
Business Management (835030)	• To understand the concept, functions & importance of Management. • To aware the students about Business Management. • To helps the students in understanding process of Business Management.
Income Tax (835040)	• To aware the about Direct & Indirect Tax. • To aware the students about various sources of Income. • To aware the students responsibilities of Taxpayers. • To motivate the students admit to CA, ICWA.
Human Resources Management. (835051)	• To study of Human Resources. • To create understanding of the importance of the HRM today scenario. • To enable creating strategies to improve Human Resource Quality. • To study procedure of job satisfaction.
Advanced Accounting I & II (835061 & 835071)	• To provide the knowledge of various Accounting concepts. • To impart the knowledge about Accounting methods, procedure & Techniques. • To Introduction with Management Accounting. • To study Procedure of Amalgamation, Absorption, Reconstruction & Liquidation.
Semester-VI	
Principles & Practices of Auditing. (836020)	• To clear fundamental concepts of Auditing. • To give knowledge about preparation of various types of Audit. • To aware students about Functions, Duties & Responsibilities. • To motivate students to admission to Chartered Accountants
Business Management	• To understand the concept, functions & importance of Management.

(836030)	• To aware the students about Business Management. • To helps the students in understanding process of Business Management.
GST. **(836040)**	• To aware the about Direct & Indirect Tax. • To aware the students about various sources of Income. • To aware the students responsibilities of Taxpayers. • To motivate the students admit to CA, ICWA.
Human Resources Management. **(836051)**	• To study of Human Resources. • To create understanding of the importance of the HRM today scenario. • To enable creating strategies to improve Human Resource Quality. • To study procedure of job satisfaction.
Advanced Accounting I & II **(836061 & 836071)**	• To provide the knowledge of various Accounting concepts. • To impart the knowledge about Accounting methods, procedure & Techniques. • To Introduction with Management Accounting. • To study Procedure of Amalgamation, Absorption, Reconstruction & Liquidation.
M.Com.-I	
Semester-I	
101 – ECONOMICS OF INDUSTRIES-I	• To give knowledge of Industrial Economics. • To understanding of various types pricing methods. • To understanding of various types market. • To understanding of Price Wars and Non-price competition, Industrial finance etc.
102 – STRATEGIC MANAGEMENT	• To understand of Strategic Management. • To understand strategies in the competitive situation. • To understand Business policy in organization. • To Understand Cost benefit analysis and Competitive advantage.
103 – RESEARCH METHODOLOGY	• To understand Meaning, Objectives, Qualities of Good Research. • To understand Issues and Problems in Research. • To understand Meaning of Research Methodology. • To understand Precautions in Report Writing.
104 A – ADVANCED ACCOUNTANCY	• To understand a well knowledge of Accounting standards. • To understand Value Added Statement and Reporting. • To understand International Financial Reporting Standards. • To understand Financial Statements.

104 C - HUMAN RESOURCE MANAGEMENT	• To understand importance of Human Resources. • To understand Ethical issue in HRM. • To understand counseling in Human Resource Management. • To understand Decision support System.
Semester-II	
202 – CASE STUDIES IN STRATEGIC MANAGEMENT	• To understand situation through cases. • To understand solve the situational problem. • To understand the importance case study. • To understand Marketing strategy.
203 B – INTERNATIONAL BUSINESS	• To understand the concept and International Business. • To understand Balance of Payments and Foreign Exchange Rate. • To understand Sources and types of Foreign Capital. • To understand India‘s steps towards globalization.
M.Com.-II	
Semester-III	
301 – MANAGEMENT ACCOUNTING	• To understand framework of financial analysis. • To understand cash flow and fund flow on financial position of an industrial organization. • To understand ability to apply their skills and knowledge effectively in future. • To understand Accounting Information system.
302 – ENTREPRENEURSHIP MANAGEMENT	• To understand the Entrepreneurship Development. • To understand challenges to start a new venture. • To understand Location of an Enterprise. • To understand Role of Financial Institutions.
303 – ORGANIZATIONAL BEHAVIOUR	• To overview of organizational behavior. • To understand Group Dynamics and Group behaviour. • To Motivation and Leadership. • To understand Individual Versus Organizational Power.
304 A – ADVANCED ACCOUNTANCY	• To understand Price Level Changes. • To understand Legal Provisions of Co-operative Societies Act 1960. • TO understand Government Accounting System. • To understand Accounting for Service Sector.
304 C - HUMAN	• To understand Impart the students with the knowledge of laws.

RESOURCE MANAGEMENT	• To understand managing human resource aspects. • To aware the students about Industrial Health and Safety Aspects. • To aware the students about Industrial Discipline and Grievances.
Semester-IV	
402 – MODERN RETAIL MANAGEMENT	• To overview Retail Development in India. • To understand introduction to Retail Management. • To understand Retail Franchising. • To understand Information Technology in Retailing.
403 B – FOREIGN TRADE	• To understand the concept of Foreign Trade • To understand Need and Importance of International Trade. • To understand India's Foreign Trade Policy. • To understand ASEAN, SAARC, SAPTA, SAFTA.