Mahatma Gandhi Sarvodaya Sangh Sanchalit

Padmashri Manibhai Desai Mahavidyalaya

Course Outcomes across all Programs

Department of Computer Science

(2013 Pattern)

F.Y.B.Sc. (Computer Science)

Subject	Outcomes
CS-101 Problem Solving Using Computers and 'C' Programming	CO1: To develop Problem Solving abilities using computers CO2: To teach basic principles of programming CO3: To develop skills for writing programs using 'C'
CS-102 Database Management Systems	CO1: To understand data processing using computers CO2: To teach basic organization of data using files CO3: To understand creations, manipulation and querying of data in databases
CS-103 Computer Science Practical Paper I	CO1: Design and implement a 'C' programs for simple problems CO2: Understand appropriate use of data types and array structures CO13: Understand use of appropriate control structures
CS-104 Computer Science Practical Paper II	CO1: Understanding basic HTML designing CO2: Writing C programs using complex data structures such as pointers, structures etc.
MTC 101 Discrete Mathematics	CO1: A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays, state important facts resulting from their studies. CO2: A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
MTC 102 Algebra and Calculus	CO1: A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. CO2: A student be able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or

	techniques in order to process the information and draw the relevant conclusion. CO3: A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture
ELC-101 Principles of Analog Electronics	CO1: To provide in depth knowledge of scientific and technological aspects of electronics. CO1: To familiarize with current and recent technological developments CO2: To enrich knowledge through programmes such as industrial visits, hobby projects, market survey, projects etc
ELC-102 Principles of Digital Electronics	CO1: To train students in skills related to electronics industry and market. CO2: To creat foundation for research and development in Electronics. CO3: To develop analytical abilities towards real world problems. CO4: To help students build-up a progressive and successful career in Electronics
Statistical Methods I	CO1: To tabulate and make frequency distribution of the given data. CO2: To use various graphical and diagrammatic techniques and interpret.
Statistical Methods II	CO1: To compute various measures of central tendency, dispersion, Skewness and kurtosis. CO2: To fit the Binomial and Poisson distributions.
Statistical Practical Course	CO1: To tabulate and make frequency distribution of the given data. CO2: To use various graphical and diagrammatic techniques and interpret. CO3: To compute various measures of central tendency, dispersion, Skewness and kurtosis. CO4: To fit the Binomial and Poisson distributions. CO5: To compute the measures of attributes. CO6: The process of collection of data, its condensation and representation for real life data. CO7: To study free statistical softwares and use them for data analysis in project

Department of Computer Science
(2013 Pattern)
S.Y.B.Sc.(Com. Sci.)

Subject	Outcomes
CS-211:Data Structures using 'C'	CO1: To learn the systematic way of solving problem. CO2: To understand the different methods of organizing large amount of data. CO3: To efficiently implement the different data structures. CO4: To efficiently implement solutions for specific problems
CS-212: Relational Database Management System	CO1: To teach fundamental concepts of RDBMS (PL/PgSQL) . CO2: To teach principles of databases. CO3: To teach database management operations. CO4: To teach data security and its importance. CO5: To teach client server architecture
CS-221:Object Oriented Concepts using C++	CO1: Acquire an understanding of basic object oriented concepts and the issues involved in effective class design. CO2: Write C++ programs that use object oriented concepts such as information hiding, constructors, destructors, inheritance etc.
CS-222:Software Engineering	CO1: To teach basics of System Analysis and Design. CO2: To teach principles of Software Engineering CO3: To teach various process models used in practice CO4: To know about the system engineering and requirement engineering CO5: To build analysis model
CS-223:Data structures Practicals and C++ Practicals	CO1: Design and implement Data structures and related algorithms. CO2: Understand several ways of solving the same problem.
CS-224:Database Practicals & Mini Project using Software Engineering techniques	CO1: Understanding the use of cursors, triggers, views and stored procedures CO2: Understanding the steps of system analysis and design CO3: Understanding Data requirements for a specific problem domain CO4: Designing Data base as per the Data requirements CO5: Designing queries as per the functional requirements
CS-103 Computer Science Practical Paper I	CO1: Design and implement Data structures and related algorithms. CO1: Understand several ways of solving the same problem.
ELC211 Microprocessor and programming	CO1: To study the applications of logic gates. CO1: To use K-maps for digital circuit design. CO2: To study and understand basics of microprocessors . CO3: To understand fundamentals of multicore technology
ELC 212	CO1: To understand basics of analog electronics

Communication Principles	CO2: To study different types of sensors CO3: To understand different types of signal conditioning circuits CO4: To learn data conversion techniques CO5: To apply knowledge of analog systems in different applications
ELC 221 Microcontroller and Embedded Systems	CO1: To study the basics of 8051 microcontroller. CO2: To study the Programming and interfacing techniques of 8051. CO3: To apply knowledge of 8051 to design different application circuits. CO4: To introduce the basic concepts of advanced Microcontrollers
ELC 222 Digital Signal processing	CO1: To understand basics of communication systems. CO2: To understand modulation, demodulation and multiplexing of signals. CO3: To understand digital communication techniques. CO4: To introduce concepts in advanced wireless communication.
Electronic Practical course	CO1: To use basic concepts for building various applications in electronics. CO2: To understand design procedures of different electronic circuits as per requirement. CO3: To build experimental setup and test the circuits. CO4: To develop skills of analyzing test results of given experiments.
MTC :211 Applied Algebra **MTC :212 Numerical Analysis** **MTC :221 Computational Geometry** **MTC :222 Operations Research**	CO1: A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays ,state important facts resulting from their studies. CO2: A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning. CO3: A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences. (iv) A student be able to apply their skills and knowledge ,that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion. CO4: A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

Department of Computer Science
(2013 Pattern)
T.Y.B.Sc.(Com. Sci.)

Subject	Outcomes
CS-331 System Programming	CO1:To understand the design structure of a simple editor. CO2: To understand the design structure of Assembler and macro processor for an hypothetical. CO3: simulated computer. To understand the working of linkers and loaders and other development utilities. CO4: To understand Complexity of Operating system as a software.
CS-332 Theoretical Computer Science	CO1: To have an understanding of finite state and pushdown automata. CO2: To have a knowledge of regular languages and context free languages. CO3: To know the relation between regular language, context free language and corresponding recognizers. CO4: To study the Turing machine and classes of problems
CS-333 Computer Networks-I	CO1: Understand different types of networks, various topologies and application of networks. CO2: Understand types of addresses, data communication. CO3: Understand the concept of networking models, protocols, functionality of each layer. CO4: Learn basic networking hardware and tools
CS-334 Internet Programming-I	CO1: Learn Core-PHP, Server Side Scripting Language CO2: Learn PHP-Database handling.
CS-335 Programming in Java-I	CO1: To learn Object Oriented Programming language CO2:To handle abnormal termination of a program using exception handling CO3:To create flat files CO4: To design User Interface using Swing and AWT
CS-336 Object Oriented Software Engineering	CO1: Understanding importance of Object Orientation in Software engineering CO2: Understand the components of Unified Modeling Language CO3: Understand techniques and diagrams related to structural modeling CO4: Understand techniques and diagrams related to behavioral modeling CO5: Understand techniques of Object Oriented analysis, design and testing
CS-341 Operating System	CO1: To understand design issues related to process management and various related algorithms CO1: To understand design issues related to memory management and various related algorithms

	CO2: To understand design issues related to File management and various related algorithms
CS-342 Compiler Construction	CO1: To understand design issues of a lexical analyzer and use of Lex tool CO2: To understand design issues of a parser and use of Yacc tool CO3: To understand issues related to memory allocation CO4: To understand and design code generation schemes
CS-343 Computer Networks-II	CO1: Basic networking concepts. CO2: Understand wired and wireless networks, its types, functionality of layer. CO3: Understand importance of network security and cryptography.
CS-344 Internet Programming-II	CO1: Learn different technologies used at client Side Scripting Language CO2: Learn XML,CSS and XML parsers. CO3: One PHP framework for effective design of web application. CO4: Learn JavaScript to program the behavior of web pages. CO5: Learn AJAX to make our application more dynamic.
CS-345 Programming in Java-II	CO1: To learn database programming using Java CO2:To study web development concept using Servlet and JSP CO3: To develop a game application using multithreading CO4: To learn socket programming concept
CS-346 Computer Graphics	CO1: To study how graphics objects are represented in Computer CO2: To study how graphics system in a computer supports presentation of graphics information CO3: To study how interaction is handled in a graphics system CO4: To study how to manipulate graphics object by applying different transformations CO5: To provide the programmer's perspective of working of computer graphics
CS-347 Practicals Based on CS-331 and CS341 – Sem I & Sem II	CO1: Design and implement System programs with minimal features to understand their complexity. CO2: Design and implement simulations of operating system level procedures.
CS-348 Practicals Based on CS-335 and CS-344 – Sem I & Sem II and Computer Graphics using Java	CO1: Implement core Java programs to solve simple problems CO2: Implement Client and Server end Java programs
CS-349 Practicals Based on CS-	CO1: Implement Simple PHP programs to solve simple problems

334 and CS-344 – Sem I & Sem II and Project	

Department of Computer Application
(2013 Pattern)
F.Y.B.B.A.(C.A.)

Subject	Outcomes
101 Modern Operating Environment & MS Office	CO1: To indicate the names and functions of the word interface components. CO2: To use styles and format text. CO3: To add header and footer to the document. CO4: Add graphics to the document.
102 Financial Accounting	CO1:To enable the students to acquire sound knowledge of basic concepts of accounting CO2: To impart basic accounting knowledge CO3: To impart the knowledge about recording of transactions and preparation of final accounts CO4: To acquaint the students about accounting software packages
103 Programming Principal & Algorithms	CO1: To develop Analytical / Logical Thinking and Problem Solving capabilities
104 Business Communication	CO1: To understand the concept, process and importance of communication. CO2: To develop an integrative approach where reading, writing, presentation skills are used together to enhance the students' ability to communicate and write effectively. CO3: To create awareness among students about Methods and Media of communication. CO4: To make students familiar with information technology and improve job seeking skills
105 Principles of Management	CO1: To provide the fundamental knowledge about working of business organization. CO2: To make students well acquainted with management process , functions and principles. CO3: To make the students familiar with recent trends in management.
106 Laboratory Course – I [Based	CO1: To indicate the names and functions of the word interface components. CO2: To use styles and format text. CO3: To add header and footer to the document. CO4: Add graphics to the document.
201 Procedure Oriented Programming using C	CO1: To teach basic principles of programming. CO2: To develop skills for writing programs using 'C'
202	CO1: To understand creations, manipulation and querying of data in databases

Data Base Management System	
203 Organizational Behavior	CO1: To equip the students to understand the impact that individual, group & structures have on their behavior within the organizations. CO2: o help them enhance and apply the knowledge they have received for the betterment of the organization.
204 Computer Applications in Statistics	CO1: To understand the power of excel spreadsheet in computing summary statistics. CO2: To understand the concept of various measures of central tendency and variation and their importance in business. CO3: To understand the concept of probability, probability distributions and simulations in business world and decision making.
205 E-Commerce Concepts	CO1: To understand the goals of E-Commerce. CO2: To understand the advantages and disadvantages of E-Commerce. CO3: To understand the Electronic Payment System.
206 Laboratory Course – II [Based on Paper No. 201 & 202]	CO1: To teach basic principles of programming. CO2: To develop skills for writing programs using 'C'. CO3: To understand creations, manipulation and querying of data in databases.

Department of Computer Application
(2013 Pattern)
S.Y.B.B.A.(C.A.)

Subject	Outcomes
301 Relational Database Management Systems	CO1: Enables students to understand relational database concepts and transaction management concepts in database system. CO2: Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger
302 Data Structures using C	CO1: To understand different methods of organising large amounts of data CO2: To efficiently implement different data structure CO3:To efficiently implement solution for different problems CO4: To get more knowledge on C programming language
303 Operating System Concepts	CO1: To know system programming CO2: To know services provided by operating system CO3: To know the Scheduling concepts
304 Business Mathematics	CO1: How to apply mathematical tools in business decision. CO2: How to do comparative study of two or more observations and understand relation between them.
305 Software Engineering	CO1: This course enables students to understand system concepts and its application in Software development.
306 Laboratory Course – III [Based on Paper No. 301 and 302]	CO1: To understand different methods of organising large amounts of data CO2: To efficiently implement different data structure CO3: To efficiently implement solution for different problems CO4: Enables students to understand relational database concepts and transaction management concepts in database system. CO5: Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger
401 OOP's using C++	CO1:Acquire an understanding of basic object-oriented concepts and the issues involved in effective class design. CO2: Enables student to write C++ programs that use: object-oriented concepts such as information hiding, constructors, destructors, inheritance.
402 Programming in Visual Basic	CO1: To learn properties and events, methods of controls and how to handle events of different controls. CO2: To understand the use of active controls and how to design VB application To learn connectivity between VB and databases.
403 Computer Networking	CO1: To know about computer network. CO2: To understand different topologies used in networking CO3: To learn different types of network.

	CO4: To understanding the use of connecting device used in network.
404 Enterprise Resource Planning	CO1: To know what is ERP. CO2: To learn different ERP technologies
405 Human Resource Management	CO1: To acquaint the students with the Human Resource Management its different functions in an organization and the Human Resource Processes that are concerned with planning, motivating and developing suitable employees for the benefit of the organization.

Department of Computer Application
(2013 Pattern)
T.Y.B.B.A.(C.A.)

Subject	Outcomes
501 Java Pr0ogramming	CO1: To learn the basic concept of Java Programming. CO2: To understand how to use programming in day to day applications.
502 Web Technologies	CO1: To know & understand concepts of internet programming. CO2: To understand how to develop web based applications using PHP.
503 Dot Net Programming	CO1: This will introduce visual programming and event driven programming practically. CO2: This will enhance applications development skill of the student.
504 Object Oriented Software Engg.	CO1: To Understand concept of system design using UML. CO3: To understand system development through object oriented techniques.
505 Software Project – I [Based on C++ / VB Technology]	CO1: Projects are a formal evaluation methodology to document student growth, knowledge, skills and attitude across the program of study.
506 Laboratory Course – V [Based on Paper No. 501 & 502]	CO1: To learn the basic concept of Java Programming. CO2: To understand how to use programming in day to day applications. CO3: To know & understand concepts of internet programming. CO4: To understand how to develop web based applications using PHP.
601 Advanced Web Technologies	CO1: To know & understand concepts of internet programming. CO2: To understand the concepts of XML and AJAX.
602 Advanced Java	CO1: To know the concept of Java Programming. CO2: To understand how to use programming in day to day applications. CO3: To develop programming logic.
603 Recent Trends in IT	CO1: To introduce upcoming trends in Information technology. CO2: To study Eco friendly software development.
604 Software Testing	CO1: To know the concept of software testing. CO2: To understand how to test bugs in software. CO3: To develop programming logic.
605 Software Project – II	CO1: Projects are a formal evaluation methodology to document student growth, knowledge, skills and attitude across the program of study

[Java / Dot net Technology]	
606 Laboratory Course – VI [Based on Paper No. 601 & 602]	CO1: To know & understand concepts of internet programming. CO2: To understand the concepts of XML and AJAX. CO3: To know the concept of Java Programming. CO4: To understand how to use programming in day to day applications. CO5:To develop programming logic.

Faculty of Commerce
(2013 Pattern)
F.Y.B.Com.

Subject	Outcomes
101 Compulsory English(A Pathway to Success)	CO1: To offer students good pieces of prose and poetry so that they realize the beauty and communicative power of English CO2: To expose them to native cultural experiences and situations so that they understand the importance and utility of English language CO3: To develop overall linguistic competence and communicative skills among the students CO4: To develop oral and written communicative skills among the students so that their employability enhances and English becomes the medium of their livelihood and personality
102 Financial Accounting	CO1: To impart the knowledge of various accounting concepts . CO2:To instill the knowledge about accounting procedures, methods and techniques. CO3: To acquaint them with practical approach to accounts writing by using software package.
103 Business Economics (Micro)	CO1:To expose Students of Commerce to basic micro economic concepts and inculcate an analytical approach to the subject matter. CO2: To stimulate the student interest by showing the relevance and use of various economic theories. CO3:To apply economic reasoning to problems of business.
104 (A) Business Mathematics and Statistics	CO1: To prepare for competitive examinations CO2: To understand the concept of Simple interest, compound interest and the concept of EMI. CO3: To understand the concept of shares and to calculate Dividend CO4: To understand the concept of population and sample. CO5: To use frequency distribution to make decision. CO6: To understand and to calculate various types of averages and variations. CO7: To understand the concept and application of profit and loss in business. CO8: To solve LPP to maximize the profit and to minimize the cost. CO9:To use correlation and regression analysis to estimate the relationship between two variables. CO10: To understand the concept and techniques of different types of index numbers.
105(b) Banking and Finance	CO1: To acquaint the students with the fundamentals of banking. CO1: To develop the capability of students for knowing banking concepts and operations. CO2:To make the students aware of banking business and practices. CO3: To give thorough knowledge of banking operations.

	CO4:To enlighten the students regarding the new concepts introduced in the banking system.
106(c) Marketing & Salesmanship	CO1: To create awareness about market and marketing. CO2: To establish link between commerce/Business and marketing. CO3: Core Objectives of the paper. CO4: To understand the basic concept of marketing. CO5: To understand marketing philosophy and generating ideas for marketing research. CO6: To know the relevance of marketing in modern competitive world. CO7: To develop an analytical ability to plan for various marketing strategy
107 Marathi	CO1: सामान्य स्तर बी. ए. १,२ अणि ३ पर्यंतच्या सामान्य स्तरावरील मराठी या विषयाचा अभ्यास करणाऱ्या विद्यार्थ्यास स्थूल पणे मराठी साहित्य, मराठी भाषा आणि मराठी संस्कृती यांचा क्रमशः परिचय करून देणे. CO2: साहित्य संबंधी - विशेषता मराठी साहित्य संबंधी रुची निर्माण करणे. CO3: विद्यार्थ्यांच्या वांग्मयीन अभिरुचीचा विकास करणे. CO4: आस्वाद घेण्याची डोळस क्षमता विकसित करणे. CO5: साहित्याभ्यासातुन जीवन विषयक समज विकसित करणे. CO6: मराठी साहित्यातील भिन्न भिन्न प्रवाह आणि प्रकार लक्षात घेणे. CO7: जागतिकीकरण विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित करणे. CO8: व्यक्तिमत्व विकासात भाषेचे महत्व स्पष्ट करणे.

Faculty of Commerce

(2013 Pattern)
S.Y.B.Com.

Subject	Outcomes
201 Business Communication.	CO1: To understand the concept, process and importance of communication. CO2: To develop awareness regarding new trends in business communication. CO3: To provide knowledge of various media of communication. CO4: To develop business communication skills through the application and exercises.
202 Corporate Accounting	CO1: To enable the students to develop awareness about Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards.

	CO2:To make aware the students about the conceptual aspect of corporate accounting CO3: To enable the students to develop skills for Computerized Accounting CO4: To enable the students to develop skills about accounting standards
203 Business Economics (Macro)	CO1: The objective of the course is to familiarize the students the basic concept of Macro Economics and application. CO2: To Study the behavior of the economy as a whole. CO3: To Study the relationship among broad aggregates. CO4: To apply economic reasoning to problems of the economy.
204 Business Management	CO1: To provide basic knowledge & understanding about business management concept. CO2: To provide an understanding about various functions of management.
205 Elements of Company Law	CO1:To impart students with the knowledge of fundamentals of Company Law. CO2: To update the knowledge of provisions of the Companies Act of 2013. CO3: To apprise the students of new concepts involving in company law regime. CO4: To acquaint the students with the duties and responsibilities of Key Managerial Personnel. CO5:To impart students the provisions and procedures under company law.
206 Cost and works Accounting	*To Impart The Knowledge Of:* CO1: Basic Cost concepts. CO2: Elements of cost. CO3: Ascertainment of Material and Labour Cost.
206 – B Indian Banking System – I	CO1:1.To create the awareness among the students of Indian banking system. CO2: To enables students to understand the reforms and other developments in the Indian Banking . CO3: To provide students insight into the functions and role of Reserve Bank of India

Faculty of Commerce
(2013 Pattern)
T.Y.B.Com.

Subject	Outcomes
301 Business Regulatory Framework (Mercantile Law)	CO1: To acquaint students with the basic concepts, terms & provisions of Mercantile and Business Laws. CO2: To develop the awareness among the students regarding these laws affecting business, trade and commerce.
302 Advanced Accounting.	CO1: To impart the knowledge of various accounting concepts CO2: To instill the knowledge about accounting procedures, methods and techniques. CO3: To acquaint them with practical approach to accounts writing by using software package.
303 (A) 303 (B) Indian & Global Economic Development Or International Economics	CO1: To expose students to a new approach to the study of the Indian Economy. CO2: To help the students in analyzing the present status of the Indian Economy. CO3: To enable students to understand the process of integration of the Indian Economy with other economics of the world. CO4: To acquaint students with the emerging issues in policies of India's foreign trade
304 Auditing & Taxation	CO1: The Study of Various Components of this course will enable the students. CO2: To acquaint themselves about the concept and principles of Auditing, Audit process, Assurance Standards, Tax Audit, and Audit of computerized Systems. CO3: To get knowledge about preparation of Audit report. CO4: To understand the basic concepts and to acquire knowledge about Computation of Income, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961
305 Cost & Works Accounting II.	CO1: To provide Knowledge about the concepts and principles application of Overheads . CO2: To provide also understanding various methods of costing and their applications.
305 – b Banking & Finance Special Paper II	CO1: To acquaint the students with Financial Markets and its various segments. CO1: To give the students and understanding of the operations and developments in financial markets in India.

	CO2: To enable them to gain an insight into the functioning and role of financial institutions in the Indian Economy
306 – b Banking & Finance Special Paper III	CO1: To acquaint the students with Banking Law and Practice in relation to the Banking system in India. CO2: To understand the legal aspects of Banking transactions and its implications as Banker and Customer. CO3: To make the Students aware of the Banking Law and Practice in India
306 – e Cost and Works Accounting Special Paper III	CO1: To impart knowledge regarding costing techniques. CO2: To provide training as regards concepts, procedures and legal Provisions of cost audit.

Faculty of Arts
(2013 Pattern)
F.Y.B.A.

Subject	Outcomes
History General Paper No. 1 (Chh. Shivaji and His Times)	CO1: To Introduce innovative study techniques in the study of History *of Maratha to make it value based, conceptual and thought* provocative. CO2: To introduce International elements in the study of Marathas to facilitate comparative analysis of this history. CO3: To highlight the importance of past in exploration of present context. To understand the Socio –economic, cultural and political background of 17th century Maharashtra. CO4: To increase the spirit of healthy Nationalism & Secularism among the student. CO5: To encourage student s to for competitive examinations. CO6: To promote interest in the discipline of History.
Introduction to Sociology	CO1: To introduce sociology to the student as a major social science. CO2: To introduce basic sociological concepts. CO3: To get acquainted with the sociological knowledge and social phenomena.
Compulsory English (Visionary Gleam: A Selection of Prose and Poetry)	CO1: To familiarize students with excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English. CO2: To expose them to native cultural experiences and situations in order to develop humane values and social awareness. CO3: To develop overall linguistic competence and communicative skills of the students
Optional English (Interface: English Literature and Language)	CO1: To expose students to the basics of literature and language. CO2: To familiarize them with different types of literature in English, the literary devices and terms so that they understand the literary merit, beauty and creative use of language. CO3: To introduce the basic units of language so that they become aware of the technical aspects and their practical usage. CO4: To prepare students to go for detailed study and understanding of literature and language. CO5: To develop integrated view about language and literature in them
G1: General Psychology	CO1: To provide solid foundation for the basic principles of psychology.

	CO2:To familiarize students with the historical trends in psychology, major concepts, theoretical perspectives, and empirical findings. CO3: To provide an overview of the applications of psychology.
Political Science – G1 (INDIAN GOVERNMENT AND POLITICS)	CO1:This paper focuses in detail on the political processes and the actual functioning of the political system . CO2:It simultaneously studies in detail the political structure both Constitutional and Administrative. CO3:It emphasizes on local influences that derive from social stratification of castes and jatis, from language, religion, ethic and economic determinants and critically assesses its impact on the political processes. CO4:The major contradictions of the Indian Political Process are to be critically analyzed along with an assessment of its relative success and failure in a comparative perspective with other developing countries and in particular those belonging to the South Asian region
Economics (Indian Economy – Problems and Prospects)	CO1:Become aware about the Economy. CO2: Get knowledge about Population of India. CO3: Understand Problem of Poverty and unemployment.
Elements of Geomorphology (G-1)	CO1: To introduce the students to the basic concepts in Geomorphology. CO2: To introduce latest concepts in Geomorphology. CO3: To acquaint the students with the utility and application of CO4: Geomorphology in different regions and environment. CO5: To make the students aware of the need of protection and conservation of different landforms.
Marathi	CO1: सामान्य स्तर बी. ए. १,२ अणि ३ पर्यंतच्या सामान्य स्तरावरील मराठी या विषयाचा अभ्यास करणाऱ्या विद्यार्थ्यांस स्थूल पणे मराठी साहित्य, मराठी भाषा आणि मराठी संस्कृती यांचा क्रमशः परिचय करून देणे. CO2: साहित्य संबंधी - विशेषता मराठी साहित्य संबंधी रुची निर्माण करणे. CO3: विद्यार्थ्यांच्या वांग्मयीन अभिरुचीचा विकास करणे. CO4: आस्वाद घेण्याची डोळस क्षमता विकसित करणे. CO5: साहित्याभ्यासातुन जीवन विषयक समज विकसित करणे. CO6: मराठी साहित्यातील भिन्न भिन्न प्रवाह आणि प्रकार लक्षात घेणे. CO7: जागतिकीकरण विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित करणे. CO8: व्यक्तिमत्व विकासात भाषेचे महत्त्व स्पष्ट करणे.

Faculty of Arts
(2013 Pattern)
S.Y.B.A.

Subject	Outcomes
Compulsory English (Literary Landscapes)	CO1: To develop competence among the students for self-learning CO2: To familiarize students with excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English CO3: To develop students' interest in reading literary pieces CO4: To expose them to native cultural experiences and situations in order to develop humane values and social awareness CO5: To develop overall linguistic competence and communicative skills of the students
General English-G2 (Study of English Language and Literature)	CO1:To expose students to the basics of short story, one of the literary forms CO2: To familiarize them with different types of short stories in English CO3: To make them understand the literary merit, beauty and creative use of language CO4: To introduce some advanced units of language so that they become aware of the technical aspects and their practical usage CO5: To prepare students to go for detailed study and understanding of literature and language CO6: To develop integrated view about language and literature in them
English Special Paper-I (Appreciating Drama)	CO1: To acquaint and familiarize the students with the terminology in Drama Criticism (i.e. the terms used in Critical Analysis and Appreciation of Drama) CO2: To encourage students to make a detailed study of a few sample masterpieces of English Drama from different parts of the world CO3: To develop interest among the students to appreciate and analyze drama independently CO4: To enhance students awareness in the aesthetics of Drama and to empower them to evaluate drama independently
English Special Paper-II(Appreciating Poetry)	CO1: To acquaint and familiarize the students with the terminology in poetry criticism (i.e. the terms used in critical analysis and appreciation of poems) CO2: To encourage students to make a detailed study of a few sample masterpieces of English poetry

	CO3: To enhance students awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate the poetry independently
Marathi-G2 **(आधुनिक मराठी साहित्य आणि उपोयोजित मराठी)**	CO1: शुद्धलेखनाची ओळख करून देणे. CO2: पारिभाषिक संज्ञाची ओळख करून देणे. CO3: चरित्र-आत्मचरित्र या साहित्य प्रकारांच्या तात्विक घटकांचे ज्ञान करून देणे. CO4: आधुनिक मराठी साहित्यातील निवडक चरित्र-आत्मचरित्रात्मक विचाराचे आकलन, आस्वाद आणि मूल्यमापन करण्याची क्षमता विद्यार्थ्यांमध्ये निर्माण करणे.
Marathi-S1 (मराठी साहित्यातील विविध साहित्यप्रकार)	CO1: मराठी साहित्य प्रकारांच्या तात्विक घटकांचे ज्ञान देणे. CO2: वेगवेगळ्या कालखंडातील मराठीतील अभिजात साहित्यकृतींचा संस्कार घडविणे. CO3: साहित्यकृतीला मुक्त प्रतिसाद देण्याची क्षमता विकसित करणे. CO4: साहित्यकृतीचे आकलन, आस्वाद आणि मूल्यमापन करण्याची दृष्टी निर्माण करणे. CO5: साहित्याचा सूक्ष्म पातळीवर अभ्यास करण्याची क्षमता विकसित करणे.
Marathi-S2 **(अर्वाचीन मराठी वाङ्:मयाचा इतिहास(इ. स. १८१८ ते १९६०)**	CO1: विशेष स्तरावर अभ्यासाचा प्रारंभ होत असताना, मराठी साहित्याचा इतिहासिक परंपरेचे स्थूल ज्ञान करून देणे. CO2: विशिष्ट कालखंडाच्या पार्श्वभूमीवर साहित्य मागील प्रेरणा, प्रवृत्तीचे ज्ञान करून देणे. CO3: साहित्य प्रकारांच्या विकसनशील परंपरेचे स्थूल ज्ञान करून देणे. CO4: पदव्युत्तर अभ्यासक्रमाची पूर्वतयारी करणे. १.
Political Science(POLITICAL THEORY& CONCEPTS)	CO1: This is an introductory paper to the concepts, ideas and theories in political theory. CO2: It seeks to explain the evolution and usage of these concepts, ideas and theories with reference to individual thinkers both historically and analytically. CO3: The different ideological standpoints with regard to various concepts and theories are to be critically explained with the purpose of highlighting the differences in their perspectives and in order to understand their continuity and change. CO4: Furthermore there is a need to emphasize the continuing relevance of these concepts today and explain how an idea and theory of yesteryears gains prominence in contemporary political theory

G-2:- Social Psychology	CO1: Acquaint Students with basic concepts, theories and applications of Social psychology. CO2: Familiarize students with group behaviour . CO3: Underline the importance of Close Relationships and Pro- social behaviour
History(Modern-India)	CO1: The course is designed to help the student to know- History of freedom movement of India, aims, objectives problems and progress of Independent India. CO2: It aims at enabling the student to understand the processes of rise of modern India. CO3: The Course attempts to acquaint student with fundamental aspects of Modern Indian History. To explain the basic concepts/ concerns/ frame work of Indian History.
History (Special Paper - I, Ancient India)	CO1: To Survey the sources of History of Ancient India. CO2: The Course intends to provide an Understanding of the social, economic, religious and institutional bases of Ancient India. CO3: The course will study such as agriculture, Industry, trade. CO4: To study the development of the concept of Nation- State background of political history. CO5: To study ancient Indian Art & Architecture.
History(History of Modern Maharashtra)	CO1: The purpose of the course is to enable the students to study the history of modern Maharashtra . CO2: To highlight the ideas, institutions, forces and movements that contributes to the modern Maharashtra. CO3: To acquaint the students with various interpretative perspectives. CO4: To introduce the student to the regional history within a broad national framework.
Sociology(Population and Society)	CO1: To introduce the significance of population studies and explain theories and basic concepts. CO2: To understand the impact of population on various institutions of society. CO3: To understand the importance of population studies for policy and development.
Geography(Geography of Disaster Management) G-2	CO1: To introduce students the concept of disaster & its relation with Geography. CO2: To acquaint the students with the utility & application of hazards in different areas & its management. CO3: To make the students aware of the need of protection & disaster management.
Geography (Economic Geography) S-1	CO1: To introduce the students to the basic principles and concepts in Economic Geography. CO2: To acquaint the students with the applications of Economic Geography in different areas and development.

	CO1: The main aim is to integrate the various factors of economic development and to acquaint the students about this dynamic aspect of economic geography
Geography (FUNDAMENTALS OF GEOGRAPHICAL ANALYSIS) S-2	CO1: To enable the students to use various Projections and Cartographic Techniques. CO2: To acquaint the students with basic of Statistical data. CO3: To acquaint the students with the principles of surveying, its importance and utility in the geographical study.
Economics (Modern Banking)	CO1: To create the awareness among the students of Modern Banking System. CO2: Banking constitutes important components towards understanding of economics. CO3: Clear understanding of the operations of banking their interaction with the rest of the economy is essential to realize how monetary forces operate through a multitude of channels- market, non-market, institutions and among others, the state.

Faculty of Arts
(2013 Pattern)
T.Y.B.A.

Subject	Outcomes
Compulsory English (Literary Pinnacles)	CO1: To introduce students to the best uses of language in literature. CO2: To familiarize students with the communicative power of English CO3: To enable students to become competent users of English in real life situations CO4: To expose students to varied cultural experiences through literature CO5: To contribute to their overall personality development by improving their communicative and soft skills
General English G-3 (Advanced Study of English Language and Literature)	CO1: To expose students to some of the best samples of Indian English Poetry CO2: To make the students see how Indian English poetry expresses the ethos and culture of India CO3: To make them understand creative uses of language in Indian English Poetry CO4: To introduce students to some advanced areas of language study CO5: To prepare students to go for detailed study and understanding of literature and language CO6: To develop integrated view about language and literature among the students
English-S3(Appreciating Novel)	CO1: To introduce students to the basics of novel as a literary form CO2: To expose students to the historical development and nature of novel CO3: To make students aware of different types and aspects of novel CO4: To develop literary sensibility and sense of cultural diversity in students CO5: To expose students to some of the best examples of novel
English –S4(Introduction to Literary Criticism)	CO1: To introduce students to the basics of literary criticism CO2: To make them aware of the nature and historical development of criticism

	CO3: To make them familiar with the significant critical approaches and terms CO4: To encourage students to interpret literary works in the light of the critical approaches CO5: To develop aptitude for critical analysis
Marathi G3	CO1: Get acquainted to various movements in Modern Marathi literature. CO2: Generate interest in modern Marathi literature. CO3: Get introduced to media. CO4: Develop skill in preparing materials for media including Newspaper, Radio and TV
History-G3(HISTORY OF THE WORLD)	CO1: To help the student to know Modern World. To acquaint the student with the Socio-economic & Political developments in other countries. And understand the contemporary world in the light of its background History. CO2: To orient the students with political history of Modern World. CO3: To acquaint Students about the main developments in the Contemporary World (To understand to important development in 20th century World.) CO4: Impart knowledge about world concepts. CO5: To enable students to understand the economic transition in World during the 20th Century. CO6: Become aware of the principles, forces, processes and problems of the recent times. CO7: To acquaint the students with growth of various political movements that shaped the modern world. CO8: To highlight the rise and growth of nationalism as a movement in different parts of the world.
History S3 (INTRODUCTION TO HISTORY)	CO1: To orient students about how history is studied, written and understood. CO2: To explain methods and tools of data collection CO3: To understand the meaning of Evolution of Historiography. CO4: To study the Various Views of Historiography. CO5: To study the approaches to Historiography. CO6: To study the types of Indian Historiography. CO7: To describe importance of inter-disciplinary research. CO8: To introduce students to the basics of research. CO9: To acquaint the student with the recent research in History. CO10: Learn how to use sources in their presentation.

History S4 (HISTORY OF ASIA IN 20TH CENTURY (1914 – 1992))	CO1: To orient the students with political history of Asia. CO2: To enable students to understand the economic transition in Asia during 20th Centuries. CO3: Understand the important developments in the 20th century Asia in a Thematic approach. CO4: To provide students with an overall view and broad perspective different movements connected with Nationalist aspirations in the region of Asia in general. CO5: To empower students to cope with the challenges of globalization.
Geography G3(Regional Geography of India)	CO1: To acquaint the students with geography of our Nation. CO2: To make the student aware of the magnitude of problems and Prospects at National level. CO3: To help the students to understand the inter relationship between the subject and the society. CO4: To help the students to understand the recent trends in regional studies.
Geography S3(AGRICULTURAL GEOGRAPHY)	CO1: To Introduce students Agricultural activities and its relation with Geography. CO2: To Familiarize the students with new modern technical methods and their applications in Agricultural activities. CO3: To enable students to apply Previously knowledge in Problems and Prospects in agriculture
Geography S4(Techniques of Spatial Analysis)	CO1: To Introduce the Students with SOI Toposheets and to acquire the Knowledge of Toposheet Reading/Interpretation. CO2: To familiarize the students with the weather instruments and their applications in Geographical phenomena. CO3: To acquaint the students with IMD weather maps and to gain the knowledge of weather map Reading / interpretation. CO4: To train the students in elementary statistics as an essential part of geography. CO5: To awareness about GIS among the students.
Sociology	CO1: To develop Sociological understanding of work, it's changing nature and impact on society. CO2: To introduce types of organizations in industrial and post-industrial society. CO3: To expose students to the impact of New Economic Policies on formal and informal sector.

Psychology(INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY	CO1: The emergence of Industrial and Organizational Psychology CO2: The work done in Industrial and Organizational Psychology CO3: The significance of training, performance appraisal, leadership models CO4: The importance of Engineering Psychology
Politics(LOICAL SELF GOVERNMENT IN MAHARASHTRA)	CO1:To introduce the students to the structure of Local Self Government of Maharashtra. CO2: To make students aware of the various Local Self Institutions, their functions, compositions and importance. CO3: To identity the role of Local Government and Local Leadership in development.
Economics (G.3 Economic Development & Planning)	CO1: Understand a new approach to the study of the Indian Economy. CO2: Ability to analyze the present status of the Indian Economy. CO3: Understand the process of integration of the Indian Economy with other economies of the world. CO4: Get acquainted with the emerging issues in policies of India's foreign trade.
Marathi-G3 (आधुनिक मराठी साहित्य आणि व्यावहारिक व उपयोजित मराठी)	CO1: आधुनिक मराठी साहित्यातील विविध साहित्य प्रकारांचा परिचय वाढविणे. त्यांचे आकलन करून घेणे साहित्याबद्दलची अभिरुची विकसित करून कलाकृतींचा आस्वाद घेण्याची क्षमता वाढवणे. CO2: नेमलेल्या कलाकृतींच्या संदर्भात साहित्यपरंपरेचे स्थूल परिचय करून देणे. CO3: भाषेचे यथोचित आकलन करण्याची व वापर करण्याची यथायोग्य क्षमता विकसित करणे. CO4: ' निबंध' व 'प्रवासवर्णन' या साहित्य प्रकाराचे तात्विक विवेचन करणे. CO5: विद्यार्थ्यांची वाचन व लेखन क्षमता विकसित करून त्यांना ग्रंथपरिक्षणाची आवड निर्माण व्हावी यासाठी प्रवृत्त करणे.
Marathi-S3 (साहित्याविचार)	CO1: साहित्याचे स्वरूप समजावून घेणे. CO2: साहित्याची प्रयोजने समजावून घेणे. CO3: साहित्य निर्मितीची प्रक्रिया समजावून घेणे. CO4: साहित्याची भाषा समजावून घेणे.

	CO5: साहित्याची आस्वाद प्रक्रिया समजावून घेणे. CO6: साहित्यिक अभिरुची समजावून घेणे. CO7: साहित्य आणि समाज यातील परस्परसंबंध समजावून घेणे. CO8: साहित्यप्रकाराची संकल्पना समजावून घेणे CO9: वाड्मयीन मूल्य समजावून घेणे.
Marathi-S4 **(भाषाविज्ञान-वर्णात्मक व इतिहासिक)**	CO1: भाषेचे स्वरूप व कार्य, भाषेच्या अभ्यासाचे महत्त्व, भाषेच्या अभ्यासाची प्रमुख अंगे जाणून घेणे. CO2: भाषा म्हणजे काय व त्याचे मानवी जीवनातील कार्य व महत्व जाणून घेणे. CO3: वेगवेगळ्या भाषा अभ्यासपद्धतीचे वेगळेपण व महत्त्व जाणून घेणे. CO4: स्वंननिर्मितीची प्रक्रिया समजावून घेणे. CO5: वांगिद्रियांची रचना व कार्य समजावून घेणे. CO6: स्वनविज्ञान, स्वानिम संकल्पना आणि मराठीची स्वानिम व्यवस्था जाणून घेणे. CO7: मराठीची रुपीमव्यवस्था समजावून घेणे. CO8: वाक्यविन्यास अर्थविन्यास या भाषावैज्ञानिक संकल्पनांचा मराठीच्या संदर्भात स्थूल परिचय. CO9: ऐतिहासिक भाषाभ्यास पद्धतीचे स्वरूप व महत्त्व लक्षात घेणे CO10: भाषाकुलाची संकल्पना जाणून घेऊन मराठी भाषेच्या उत्पत्ती चा अभ्यास करणे. CO11: मराठी भाषेचा उत्पत्ती काळ जाणून घेऊन तत्कालीन भाषिक स्थित्यंतराचा आढावा घेणे. CO12:टप्प्याटप्प्याने भाषा म्हणून मराठीच्या वाटचालीचा ऐतिहासिक आढावा घेणे.

Faculty of Science
(2013 Pattern)
F.Y.B.Sc.

Subject	Outcomes
ZY-101 Zoology Theory Paper I **ZY-102 Zoology Theory Paper II** **ZY-103 Zoology Practical**	CO1: To provide thorough knowledge about various animal sciences from primitive to highly evolved animal groups To make the students aware of applications of Zoology subject in various industries CO2: To highlight the potential of various branches to become an entrepreneur CO3: To equipped the students with skills related to laboratory as well as field based studies CO4: To make the students aware about conservation and sustainable use of biodiversity CO5: To inculcates interest and foundation for further studies in Zoology CO5: To address the socio-economical challenges related to animal sciences CO6:To facilitate students for taking up and shaping a successful career in Zoology
Introduction to Microbiology **Basic Techniques in Microbiology** **Microbiology Practical Course**	CO1: To enrich students' knowledge and train them in the pure microbial sciences CO2: To introduce the concepts of application and research in Microbiology CO3: To inculcate sense of scientific responsibilities and social and environment awareness. CO4: To help students build-up a progressive and successful career
Physical and Inorganic Chemistry **Organic and Inorganic Chemistry** **Chemistry Practical**	CO1: To provide indepth knowledge of scientific and technological aspects of Chemistry CO2: To familiarize with current and recent developments in Chemistry CO3: To enrich knowledge through programmes such as industrial visits, projects etc. CO4: To train students in skills related to Chemistry for academic and industrial requirement. CO5: To creat foundation for research and development in Chemistry CO1: To develop analytical abilities for independent thinking CO2: To help students build-up a progressive and successful career in Chemistry

Botany Theory Paper I **Botany Theory Paper II** **Botany Practical**	CO1: To provide thorough knowledge about various plant groups from primitive to highly evolved CO2: To make the students aware of applications of different plants in various industries CO3: To highlight the potential of these studies to become an enterpruner CO4: To equippe the students with skills related to laboratory as well as field based studies CO5: To make the students aware about conservation and sustainable use of plants CO6: To creat foundation for further studies in Botany CO7: To address the socio-economical challenges related to plant sciences CO8: To facilitate students for taking up and shaping a successful career in Botany

Faculty of Science
(2013 Pattern)
S.Y.B.Sc.

Subject	Outcomes
CH-211 Physical & Analytical Chemistry	CO1: Concept of kinetics , terms used , rate laws , types of order CO2: Discuss examples of first order and second order reaction CO3: Pseudo molecular reactions CO4: Factors affecting on rate of reaction CO5: Techniques of measurement of rate of reaction CO6: To solve problems CO7: Know about photochemistry CO8: Understand difference between thermal and photochemical reactions CO9: Understand laws of photochemistry. CO10: Learn what is quantum yield and it's measurement Know Types of photochemical reactions and photo physical process CO11: Know about quenching and chemiluminence CO12: To solve numerical CO13: Concept of distribution of solute amongst pair of immiscible solvents CO14:. Distribution law and it's thermodynamic proof CO15: Distribution law and nature of solute in solution state CO16: Application – Solvent extraction CO17: To solve numerical CO18: What is Analytical Chemistry CO19: Chemical analysis and its applications CO20: Sampling CO21: Common techniques CO22: Instrumental methods and other techniques CO23: Choice of method CO24: Meaning of error and terms related to expression & estimation of errors CO25: Methods of expressing accuracy and precision CO26: Classification of errors CO27: Significant figures and computations
CH-212 Organic & Inorganic Chemistry	
CH-222 Organic & Inorganic Chemistry	
CH-221 Physical & Analytical Chemistry	

CH- 223 **Chemistry Practical**	CO28: Distribution of errors CO29: Mean and standard deviations CO30: Reliability of results CO31: Basic principles in qualitative analysis CO32: Meaning of common ion effect CO33: Role of common ion effect and solubility product CO34: Different groups for basic radicals CO35: Group reagent and precipitating agents CO36: Interfering anions and its removal CO37: Separation for basic radicals CO38: Method of detection of acidic radicals.
ZY.211 **Animal Systematics and Diversity –III** **ZY.212** **Applied Zoology I** **ZY. 221** **Animal Systematics and Diversity –IV** **ZY.222** **Applied Zoology II** **ZY.223** **Zoology Practical course**	CO1: Get thorough knowledge about various animal sciences from primitive to highly evolved animal group shighly evolved animal groups. CO2: Become aware of applications of Zoology subject in various industries. CO3: Become ready to be an entrepreneur. CO4: Acquire skills related to laboratory as well as field based Studies. CO5: Become aware about conservation and sustainable use of biodiversity. CO6: Get equipped for further studies in Zoology. CO7: Understand the socio-economical challenges related to animal sciences. CO8: Acquire all skills for taking up and shaping a successful career in Zoology
MB: 211 **Bacterial Systematics and Physiology**	CO1: Understand the concept of taxonomy and summarize them with the help of Chemotaxonomy, Numerical taxonomy etc. CO2: Understand the importance of genetic analysis in taxonomy. CO3: Get ability to distinguish between the methods of taxonomy. CO4: Understand the importance of enzymes in living cell and distinguish between different classes of enzymes and their function. CO5: Get ability to illustrate and explains the various metabolic pathways of the cell in particular prokaryotic
MB: 212 **Industrial and Soil Microbiology**	CO1: Understand the importance of microorganisms in Industry. CO2: Acquire ability to describe industrially important micro-organisms. CO3: Understand the method of cultivation of microorganisms on large scale. CO4: Understand the distinction between the types of fermentation processes and fermentors. CO5: Comprehend the construction and working of different fermentors.

	CO6: Understand the important soil microorganisms and teir role in agriculture. CO7: Understand how soil microorganisms helps in maintaining with elemental cycles in nature
MB: 221 Bacterial Genetics	Get ability to summarize the basics of genetics eg., DNA, RNA structure. CO1: Get ability to paraphrase the concept of gene. CO2: Understand the concept of central dogma of molecular biology and its mechanism. CO3: Understand the basic molecular processes like DNA replication, transcription and translation. CO4: Understand various types of mutations and their causes.
MB: 222 Air and Water Microbiology	CO1: Understand air and water microflora. CO2: Get ability to distinguish between microorganisms present in air and water. CO3: Master various techniques to measure the air and water microflora
Practical Course based on MB:211, MB:212, MB:221, MB:222	CO1: Master techniques of microbiology like growth analysis (Calculation of growth rate, specific growth rate and generation time). CO2: Get ability to analyze effect of salt, pH, temperature, heavy metals on bacterial growth. CO3: Practical for the second year students is kept more flexible, designed to evolve project themes on environment, agriculture and pollution aspects eg., Biochemical CO1: characterization of bacteria, Bacteriological tests of potability of water.
BO-211 Taxonomy of Angiosperms and Plant community	CO1: Get familiar with basics of ecological studies. CO2: Understanding of food chain, food web difference and importance. CO3: To make sure thet importance of botany in day to day life. CO4: The plant tissue culture expertise are required for advance biotechnological studies. CO5: The mushroom cultivation course will surely make candidate self-sustainable by knowing the commercial significance of plant studies.
BO-212 Plant Physiology	
BO-221 Plant Anatomy and Embryology	
BO-222 Plant Biotechnology	
Botany Practical	
English (Literary Vistas)	
Marathi	CO1: विद्यार्थ्यांमध्ये मराठी विज्ञान साहित्य विषयी आवड निर्माण करणे. CO2: विद्यार्थ्यांमध्ये वैज्ञानिक जाणिवा निर्माण करून देणे.

	CO3: विद्यार्थ्यांना विज्ञान, उद्योगातील विविध प्रवाह, संधी यांचा परिचय करून देणे. विद्यार्थ्यांमध्ये लेखन, वाचन, आकलन आणि संभाषण ही भाषिक कौशल्य अधिकाधिक विकसित करणे. CO1: भाषिक कौशल्य यांचे विविध अविष्कार आणि प्रसारमाध्यमे यांच्या परस्पर संबंधाचे ज्ञान विद्यार्थ्यांना करून देणे. CO2: वैज्ञानिक, कार्यालयीन, व्यवसायिक अदी कामकाजात मराठीच्या होणाऱ्या वापराची माहिती देत परिभाशिक संज्ञांची ओळख विद्यार्थ्यांना करून देणे.

Faculty of Science
(2013 Pattern)
T.Y.B.Sc.

Subject	Outcomes
CH-331 **Physical Chemistry**	CO1: **Chemical Kinetics :** After studying this topic students are expected to know. i. Expression for rate constant k for third order reaction ii. Examples of third order reaction iii. Characteristics of third order rate constant k iv. Derivation for half-life period of third order reaction and to show that half-life is inversely proportional to square of initial concentration of reactants. v. Experimental determination of order of reaction by Integrated rate equation method, Graphical method, Half-life method and Differential method. vi. Explain the term energy of activation with the help of energy diagram vii. Explain the term temperature coefficient. viii. Effect of temperature on rate constant k ix. Derivation of Arrhenius equation x. Graphical evaluation of energy of activation xi. Solve the numerical problems based on this topic. CO2: **Electrolytic Conductance :** After studying this topic students are expected to know. i. Ohm's law and electrical units such as coulomb, Ampere, Ohm and Volt. ii. Meaning of specific resistance, specific conductance, cell constant and their units. iii. Cell constant, its theoretical and experimental determination. iv. Preparation of conductivity water. v. Experimental determination of conductance. vi. Variation of specific and equivalent conductance of strong and weak electrolyte with dilution vii. Meaning of infinitely dilute solution. viii. Kohlrausch's law of independent migration of ions and its applications such equivalent conductance of weak electrolyte at zero conc., degree of dissociation (α),ionic product of water. ix. Transport number of an ion x. Hittorf's rule xi. Experimental determination of transport number by Hittorf's and moving boundary

	xii. method. xiii. Drawbacks of Arrhenius theory, Debye-Huckel-Onsager Interionic Attraction theory xiv. Asymmetry /Relaxation effect xv. Electrophoretic effect xvi. Validity of Onsager equation xvii. Fugacity and activity concept xviii. Activity and activity coefficient of strong electrolyte. xix. Solve the numerical problems based on this topic. CO3: **Investigation of molecular structure :** After studying this topic students are expected to know. i. Understand the term additive and constitutive properties ii. Understand the term specific volume, molar volume and molar refraction. iii. Understand the meaning of electrical polarization of molecule. iv. Understand the meaning of induced and orientation polarization v. Dipole moment and its experimental determination by temperature variation method. vi. Application of dipole moment for structure determination. vii. Nature of wave and its characteristics such as wavelength, wave number, frequency and velocity. viii. Rotational / Microwave spectroscopy ix. Derivation for rotational spectra for the transition from J to J+1 x. Limitations of Rotational Spectra. xi. Vibrational Spectra xii. Vibrational rotational Spectra xiii. Raman Spectroscopy xiv. Solve the numerical problems based on this topic. CO4: **Phase Rule :** After studying this topic students are expected to know. i. Meaning and Types of equilibrium such as true or static, metastable and Unstable equilibrium. ii. Meaning of phase, component and degree of freedom. iii. Derivation of phase rule. iv. Explanation of water system : Description of the curve, Phase rule relationship and typical features. v. Explanation of sulphur system : Description of the curve, Phase rule relationship and typical features.

	vi. vi. Explanation of two component system curve : for silver-lead and Zinc-cadmium.
CH-332 **Inorganic Chemistry**	CO1: Know the theories of covalent bond formation . CO2: Know the assumptions and limitations of VBT. CO3: Understand the need of concept of MOT . CO4: Know LCAO principal and its approximation . CO5: Understand and show the formation of bonding and antibonding MO's . CO6: Draw the shapes of s, p, d orbital CO7: Draw combinations of s-s, s-p, p-p and d-d orbital to form σ and π molecular orbitals. CO8: Know the meaning of various terms involved in coordination chemistry. CO9: Know the different types of Ligands. CO10: Understand the chelating agents, chelate and stability of chelates and complexes. CO11: Calculate the charge on complex ion and the oxidation number. CO12: Be able to give the IUPAC name the co-ordination compound. CO13: Know the application of co- ordination compounds in biology and chemistry. CO14: Be able to understand the Werner's formulation of complexes and identify the ionizable ions. CO15: Be able to distinguish between ionizable and non-ionizablevalencies with suitable examples. CO16: Give the suitable physical and chemical test for identification of number and types of ionizable ions. CO17: Be able to draw the geometrical and optical isomerism of complexes.
CH-333 **Organic Chemistry**	CO1: Definition and types of organic acid and base . CO2: The pka and pkb concepts. CO3: To draw different types of disubstituted cyclohexane in Chair form. CO4: To distinguish between geometrical and optical isomerism. CO5: Definition and type of nucleophiles and leaving groups. CO6: Different types of nucleophilic substitution reactions CO7: Different types of carbon-carbon unsaturated compounds . CO8: Orientation / rules in addition reactions CO9: Definition and types of elimination reactions. CO10: Different types of bases and leaving groups. CO11: Definition and types of aromatic substitution reactions. CO12: Classification of directing groups

CH-334 **Analytical Chemistry**	CO1: Principles of common ion effect and solubility product. CO2: Formation of complex ion CO3: Methods of thermo gravimetric analysis. CO4: Principles of TGA and DTA CO5: Principles of Spectrophotometric analysis and properties of electromagnetic radiations. CO6: Different Terms like absorbance, transmittance, and molar absorptivity. CO7: Voltammetry and polarography as an analytical tool. CO8: Construction, working, advantages and disadvantages of DME CO9: Atomic absorption spectroscopy as an analytical tool. CO10: Measurement of absorbance of atoms by AAS. CO11: Emission spectroscopy as an analytical tool. CO12:Measurement of emission of atomic species.
CH-335 **Industrial Chemistry**	CO1: Modern Approach to Chemical Industry. CO2: Agrochemicals. CO3: Manufacture of Basic Chemicals. CO4: Petrochemicals and eco-friendly fuels. CO5: Food and Starch Industry. CO6: Cement and Glass industry. 1.
CH-336-E **Agriculture Chemistry**	CO1: Know the role of agriculture chemistry and its potential. CO2: Understand basic concept of soil, properties of soil & its classification on the basis of pH. CO3: Know the different plant nutrients, Their functions and deficiency symptoms. CO4: Understand importance of manures as compared to chemical fertilizers'. CO5: Understand the importance of green manuring . CO6: Have the knowledge of the use of proper the plants. CO7: Know various techniques to protect the plants. CO8: Have the knowledge of various pesticides, insecticides, fungicides and herbicides. CO9: Identify the problematic soil and recommend method for their reclamation. CO10: Have the knowledge of quality irrigation water, water quality standard and analysis of irrigation water
CH-341 **Physical Chemistry**	CO1: **ElectrochemicalCell :**After studying this topic students are expected to knowi. i. What is mean by Electrochemical cell with specific example ii. Origin of EMF of electrochemical cell. iii. Conventions used to represent electrochemical cell. iv. Thermodynamic conditions of reversible cell

	v. Explanations of reversible and irreversible electrochemical cell with suitable example. vi. What is mean by reference electrode? vii. Primary and secondary reference electrode viii. Construction, representation, working and limitation of Standard hydrogen Electrode ix. Construction, representation and working of Calomel and Silver –Silver Chloride electrode x. Types of electrodes xi. Conditions of Standard Cell xii. Construction, representation and working of Weston Standard Cell. xiii. Measurement of EMF of electrochemical cell xiv. Nernst Equation for theoretical determination of EMF. xv. Thermodynamics and EMF: Relation of EMF with ΔG, ΔG°,ΔH, ΔS and equilibrium constant K of the cell reaction. xvi. Explanation of the term liquid junction potential xvii. Classification of electrochemical cell xviii. Chemical cell with and without transfer xix. Electrode and electrolytic concentration cell xx. Concentration cell with and without transfer. xxi. Application of EMF measurement such as pH determination, Determination of solubility and solubility product. xxii. Potentiometric titrations: Weak acid against strong base, Titration of polybasic acids,Precipitation and Redox titrations. xxiii. Solve the numerical problems based on this topic. CO2: **Nuclear Chemistry:** After studying this topic students are expected to know10 i. The atom its nucleus and outer sphere. ii. Classification of nuclides with suitable examples such as isotope, isobar, isotone and isomers iii. Explanation of stability of nucleus through neutron to proton ratio, odd and even nature of proton and neutron, Mean binding energy. iv. Conversion of mass into energy v. Mass defect, Total and mean binding energy vi. Explanation of binding energy curve. vii. Types of decay viii. Discovery of radioactivity ix. Decay kinetics x. Relation of half-life with decay constant. xi. Unit of Radioactivity : Curie Bq

	xii. Measurement of radioactivity by G.M. and proportional counter xiii. Principle, construction and working of G.M. / Proportional counter. xiv. Application of radioisotopes as a tracer xv. Chemical investigation : Reaction mechanism and structure determination w.r.t PCl5 and thiosulphate ion xvi. Age determination- by Carbon-14 dating and Uranium-Lead/ Thorium-Lead Ratio xvii. Medical applications-Assess the volume of blood in patients body, Goitre xviii. Solve the numerical problems based on this topic. CO3: **Crystal Structure:**After studying this topic students are expected to know. i. Distinguish between crystalline and amorphous solids / anisotropic and isotropic solid ii. Explain the term crystallography and laws of crystallography iii. Weiss and Millers Indices iv. Crystal system and their characteristics v. Explain the term polymorphism /allotrophism vi. Distance between the planes for 100, 110 and 111 type of simple, body centred and face centred cubic crystals vii. Bragg's experiment and Derivation of ($n\lambda = 2d\sin\Theta$)Bragg's equation viii. Explanation: Structure of NaCl can be ascertained with the help of X-ray analysis. ix. Laue's and Bragg's method. CO4: **Quantum Chemistry:** After studying this topic students are expected to know. i. Concept of quantization ii. Atomic spectra iii. Wave particle duality iv. Uncertainty principle and its physical significance v. Derivation of time independent Schrodinger wave equation. vi. Wave function and its Interpretation vii. Well behaved function viii. Hamiltonian Operator ix. Particle in a box (1 and 3 dimensional) x. Degeneracy xi. Application to conjugated systems xii. Harmonic oscillator **xiii.** Solve the numerical problems based on this topic.

CH-342 **Inorganic Chemistry**	CO1: The meaning of term f-block elements, Inner transition elements, lanthanides, actinides. CO2: Electronic configuration of lanthanides and actinides. CO3: Oxidation states of lanthanides and actinides and common oxidation states. CO4: The meaning of metal & semiconductor. CO5:The difference between metal, semiconductor and insulator. CO6: Metallic bond on the basis of band theory. CO7: Know the nature of solids. CO8: Know the crystal structures of solids. CO9: Draw the simple cubic, BCC and FCC structures. CO10: Define the homogeneous catalysis. CO11: Give examples of homogeneous catalysts. CO12: Define the heterogeneous catalyst and heterogeneous catalysis. CO13: Give examples of heterogeneous catalysts. CO14: Identify the biological role of inorganic ions & compounds. CO15: Know the abundance of elements in living system and earth crust.
CH-343 **Organic Chemistry**	CO1: Definition and formation of carbanions. CO2: Possible mechanism of some known name reactions involving carbanions CO3: Meaning of terms Disconnection, Synthons, Synthetic equivalence, Functional Group Interconversion, Target Molecule. CO4: What is retrosynthesis? CO5: Different types of intermediate in rearrangement reactions? CO6: Different regions of electromagnetic radiations . CO7: Various terms used in spectroscopy CO8: Different types of electronic excitations. CO9: Various terms used in UV spectroscopy. CO10: What is the effect of conjugation on UV band CO11: Various terms used in PMR spectroscopy. CO12: To distinguish compounds by PMR CO13: Various methods of isolation/extraction of these natural products.
CH-344 **Analytical Chemistry**	CO1: Principles of solvent extraction. CO2: Difference between KD and D. CO3: Principle of chromatographic methods. CO4: Relation between theoretical plates and column efficiency. CO5: Principle of GSC and GLC analysis. CO6: Separation mechanism involved in GSC and GLC. CO1: Need of liquid chromatography.

	CO7: Separation mechanism involved in adsorption and partition HPLC. CO8: Comparison between electrophoresis and chromatography. CO9: Principle and theory of electrophoresis CO10: Nephelometry and Turbidimetry as an analytical tool. CO11 :Measurement of turbidance.
CH-345 Industrial Chemistry	CO1: Polymer chemistry. CO2: Sugar and Fermentation Industry. CO3: Soap, detergents and Cosmetics. CO4: Dyes and paints. CO5: Chemistry of pharmaceutical industries. CO6: Pollution prevention and waste management
CH-346-E Dairy Chemistry	CO1: Knowing importance of the subject from the point of rural economy. CO2: Knowing the composition of milk, its food & nutritive value. CO3: Understanding the Microbiology of the milk. CO4: Understanding various preservation and adulterants, various milk proteins and their role for the human body. CO5: Knowing various milk products, their composition, manufacture and uses.
MB 331 Medical Microbiology – I	CO1: Understand anatomy and physiology, with respect to pathogen and diseases. CO2: Understand how to classify and characterize diseases causing organisms like bacterial, fungal, viral etc. CO3: Understand the pathogenesis, diagnosis, epidemiology of diseases and their causative agents
MB 332 Genetics & Molecular Biology – I	CO1: Get ability to extend their knowledge from prokaryotic gene expression to eukaryotic gene expression, their control and damage. CO2: Understand various techniques of gene transfer and their role in gene mapping. CO3: Understand recombinant DNA technology (RDT), methods in RDT and their applications in various fields
MB 333 Enzymology	CO1: Understand enzymology with respect to identification, assays purification and kinetics. CO2: Understand the role of co enzyme in enzyme catalysis. CO3: Comprehend Bioenergetis, Biosynthesis and degradation pathways. CO4: Understand bacterial photosynthesis
MB 334 Immunology – I	CO1: Understand the term immunology, immunity, types of that. CO2: Understand components of immune system and get ability to describe them in detail. CO3: Understand Immunoglobulins, AntigenAntibody Interactions etc.

MB 335 Fermentation Technology –I	CO1: Understand the process of fermentation. CO2: Understand the steps and methods of industrial fermentation. CO3: Understand the types of bioreactors and their role in fermentation. CO4: Understand downstream processes for various products.
MB 336 Food & Dairy Microbiology	CO1: Understand the role of microorganisms in dairy, food, and environment. CO2: Understand milk chemistry and microbiology. CO3: Understand how to apply process of food preservation, food spoilage and microorganisms involved in them.
MB 341 Medical Microbiology – II	CO1: Understand anatomy and physiology, with respect to pathogen and diseases. CO2: Understand how to classify and characterize diseases causing organisms like bacterial, fungal, viral etc. CO3: Understand the pathogenesis, diagnosis, epidemiology of diseases and their causative agents
MB 342 Genetics & Molecular Biology – II	CO1: Get ability to extend their knowledge from prokaryotic gene expression to eukaryotic gene expression, their control and damage. CO2: Understand various techniques of gene transfer and their role in gene mapping. CO3: Understand recombinant DNA technology (RDT), methods in RDT and their applications in various fields
MB 343 Metabolism	CO1: Understand enzymology with respect to identification, assays purification and kinetics. CO2: Understand the role of co enzyme in enzyme catalysis. CO3: Comprehend Bioenergetis, Biosynthesis and degradation pathways. CO4: Understand bacterial photosynthesis
MB 344 Immunology – II	CO1: Understand the term immunology, immunity, types of that. CO2: Understand components of immune system and get ability to describe them in detail. CO3: Understand Immunoglobulins, AntigenAntibody Interactions etc.
MB 345 Fermentation Technology – II	CO1: Understand the process of fermentation. CO2: Understand the steps and methods of industrial fermentation. CO3: Understand the types of bioreactors and their role in fermentation. CO4: Understand downstream processes for various products.
MB 346	CO1: Understand the role of microorganisms in dairy, food, and environment. CO2: Understand milk chemistry and microbiology.

Agricultural & Environmental Microbiology	CO3: Understand how to apply process of food preservation, food spoilage and microorganisms involved in them.
MB 347 Practical course – I Applied Microbiology	CO1: Understand various techniques carried out in industries like fermentation, food and dairy.
MB 348 Practical course – II Biochemistry & Molecular Biology	CO1: Understand various biochemical techniques like chromatography, centrifugation, DNA and plasmid isolation, their quantification.
MB 349 Practical course – III Diagnostic Microbiology & Immunology	CO1: Understand various techniques in clinical Microbiology, Immunohematology, Immunoprecipitation, Agglutination tests etc

Department of Computer Science
(2019 Pattern)
F.Y.B.Sc(Comp. Sci.)

Subject	Outcomes
CS-111 Problem Solving using Computer and 'C' Programming	CO1: . Explore algorithmic approaches to problem solving. CO2: Develop modular programs using control structures and arrays in 'C'.
CS-112 Database Management Systems	CO1: Solve real world problems using appropriate set, function, and relational models. CO2: Design E-R Model for given requirements and convert the same into database tables. CO3: Use SQL
CS-113 Practical course based on CS101 and CS102	CO1: Devise pseudocodes and flowchart for computational problems. CO2: Write, debug and execute simple programs in 'C'. CO3: Create database tables in postgreSQL. CO4: Write and execute simple, nested queries.
ELC-111 Semiconductor Devices and Basic Electronic Systems	CO1: To study various types of semiconductor devices. CO2: To study elementary electronic circuits and systems
ELC-112 Principles of Digital Electronics	CO1: To get familiar with concepts of digital electronics. CO2: To learn number systems and their representation. CO3: To understand basic logic gates, Boolean algebra and K-maps . CO4: To study arithmetic circuits, combinational circuits and sequential circuits
ELC-113 III Electronics Lab IA	CO1: To create foundation for research and development in Electronics/ Computer Science. CO2:To develop analytical abilities towards real world problems. To help students to build-up a progressive and successful career.
MTC-111 Matrix Algebra	CO1: To understand the basic components in electronics with their symbol, working principle and classifications. Demonstrate quantitative problem solving skills in all the topics covered. CO2: Understand the basic characteristics and operation of semiconductor devices such as p-n junctions and Zener diodes, LED etc. CO3: Understand the basic concepts of Transistor and its configurations. basic construction, equivalent circuits and characteristics of unipolar devices such as UJT,JFET and MOSFET
MTC-112 Discrete Mathematics	CO1: A students should be able to work with graphs and identify certain parameters and properties of the given graphs.

	CO1: A students should be able to perform certain algorithms, justify why these algorithms work, and give some estimates of the running times of these algorithms
MTC-113 Mathematics Practica	CO1: A students should be able to work with graphs and identify certain parameters and properties of the given graphs. CO2: A students should be able to perform certain algorithms, justify why these algorithms work, and give some estimates of the running times of these algorithms.
CSST 111 Descriptive Statistics I	CO1: Develop skills in presenting quantitative data using appropriate diagrams, tabulations and summaries and Fundamental statistical measures: Average, median, mode, mean, absolute deviations. CO2: How to calculate and apply measures of location and measures of dispersion -- grouped and ungrouped data cases. Use appropriate statistical skewness and kurtosis methods in the analysis of simple datasets. CO3: To give general idea to distinct value of the random variable for each distinct variable and To study Random variables and their distributions:uniform, binomial, Bernoulli, Poisson, geometric Calculate and interprete coefficient of correlation and determination and Bivariate and Multivariate Regression and Correlation. To understand real life situations of time series
CSST 112 Mathematical Statistics	CO1: To understand revision of theory of probability and advance theory of probability. CO2: Learn random variables and continuous probability distributions. CO3: Learn about the large and small sample test and non parametric test.
CSST113 Statistics Practical Paper I	CO1: To tabulate and make frequency distribution of the given data. CO2: To use various graphical and diagrammatic techniques and interpret. CO3: To compute various measures of central tendency, dispersion, Skewness and kurtosis. CO4: To fit the Binomial and Poisson distributions. CO5: To compute the measures of attributes. CO6: The process of collection of data, its condensation and representation for real life data. CO7: To study free statistical softwares and use them for data analysis in project
CS-121 Advanced 'C' Programming	CO1: Develop modular programs using control structures, pointers, arrays, strings and structures CO2: Design and develop solutions to real world problems using C
CS-122 Relational Database Management Systems	Design E-R Model for given requirements and convert the same into database tables. CO1: Use database techniques such as SQL & PL/SQL. CO2: Explain transaction Management in relational database System. CO3: Use advanced database Programming concepts

S-123 Practical course based on CS201 and CS202	CO1: Write, debug and execute programs using advanced features in 'C'. CO2: To use SQL & PL/SQL. CO3: To perform advanced database operations
ELC-121 Instrumentation System	CO1: To study Instrumentation System. CO2: To study various blocks of Instrumentation System. CO1: To study Smart Instrumentation System
ELC-122 Basics of Computer Organisation	CO1: To get familiar digital sequential circuits. CO2: To study Basic computer Organization. CO3: To study Memory architecture
ELC-123 Electronics Lab IB	CO1: To help students to build-up a progressive and successful career. CO2: To develop analytical abilities towards real world problems
MTC-121 Linear Algebra	CO1: Study of vector. CO2: Orthogonality and Symmetric Matrices. CO3: The Geometry of vector spaces
MTC-122 Graph Theory	CO1: Connected graph, tree. CO2: Introduction to graph.
MTC-123 Mathematics Practical	CO1: Practical based on the applications of articles in MTC- 121 and MTC- 122
CSST121 Methods of Applied Statistics	CO1: To tabulate and make frequency distribution of the given data. CO2: To use various graphical and diagrammatic techniques and interpret.
CSST122 Continuous Probability Distributions and Testing of Hypothesis	CO1: To compute various measures of central tendency, dispersion, Skewness and kurtosis. CO2: To fit the Binomial and Poisson distributions.
CSST123 Statistics Practical Paper II	CO1: To understand the relationship between two variables using scatter plot. CO2: To compute coefficient of correlation, coefficient of regression. CO3: To fit various regression models and to find best fit. CO4: To fit the Normal distribution. CO5: To understand the trend in time series and how to remove it. CO6: To apply inferential methods for real data sets. CO7: To generate model sample from given distributions. CO8: To understand the importance and functions of different statistical organizations in the development of nation.

Department of Computer Application

(2019 Pattern)

F.Y.B.B.A.(Computer Application)

Subject	Outcomes
CA-101 Business Communication	CO1: To understand what is the role of communication in personal and business world. CO2: To understand system and communication and their utility. CO3: To develop proficiency in how to write business letters and other communications in required b
CA-102 Principles of Management	CO1: To understand basic concept regarding org. Business Administration. CO2: To examining how various management principles. CO3: To develop managerial skills among the students
CA-103 C Language	CO1: To teach basic principles of programming. CO2: To develop skills for writing programs using 'C'
CA-104 Database Management System	CO1: To understand creations, manipulation and querying of data in databases
CA-105 Statistics	CO1: To understand role and importance of statistics in various business situations. CO2: To develop skills related with basic statistical technique. CO3: Develop right understanding regarding regression, correlation and data interpretation
CA-201 Organization Behavior & Human Resource Management	CO1: To understand basic concept of HRM & OB. CO2: To make aware students about traditional & modern methods of procurement & development in organization. CO3: To know the major trends in HRM & OB
CA-202 Financial Accounting	CO1: To develop right understanding regarding role and importance of monetary and financial transactions in business. CO2: To cultivate right approach towards classifications of different transactions and their implications. CO3: To develop proficiency preparation of basic financial as to how to write basis accounting statement - Trading and P&L
CA-203 Business Mathematics	CO1: To understand role and importance of Mathematics in various business situations and while developing softwares. CO2: To develop skills related with basic mathematical technique
CA-204 Relational database	CO1: Enables students to understand relational database concepts and transaction management concepts in database system. CO2: Enables student to write PL/SQL programs that use: procedure, function, package, cursor and trigger.

CA-205 **Web Technology** **HTML-JS-CSS**	CO1: To know & understand concepts of internet programming. CO2: To understand how to develop web based applications using JavaScript

Faculty of Commerce
(2019 Pattern)
F.Y.B.Com.

Subject	Outcomes
111 Compulsory English- I	CO1: To offer relevant and practically helpful pieces of prose and poetry to students so that they not only get to know the beauty and communicative power of English but also its practical application. CO2: To expose students to a variety of topics that dominate the contemporary socioeconomic and cultural life.
112 Financial Accounting – I	CO1: To impart knowledge of basic accounting concepts CO2: To create awareness about application of these concepts in business world CO3: To impart skills regarding Computerised Accounting CO4: To impart knowledge regarding finalization of accounts of various establishments.
113 Business Economics- I	CO1: To impart knowledge of business economics CO2: To clarify micro economic concepts CO3: To analyze and interpret charts and graphs CO4: To understand basic theories, concepts of micro economics and their application
114 (A) Business Mathematics and Statistics -	CO1: To introduce the basic concepts in Finance and Business Mathematics and Statistics CO2: To familiar the students with applications of Statistics and Mathematics in Business CO3: To acquaint students with some basic concepts in Statistics. CO4: To learn some elementary statistical methods for analysis of data. CO5: The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods
115 Banking & Finance- I	CO1: To provide knowledge of fundamentals of Banking CO2: To create awareness about various banking concepts CO3: To conceptualize banking operations.
116 Marketing and Salesmanship- I	CO1: To introduce the basic concepts in Marketing. CO2: To give the insight of the basic knowledge of Market Segmentation and Marketing Mix CO3: To impart knowledge on Product and Price Mix. CO4: To establish link between commerce, business and marketing. CO5: To understand the segmentation of markets and Marketing Mix. CO6: To enable students to apply this knowledge in practicality by enhancing their skills in the field of Marketing
117 Marathi	CO1: हिहिध क्षेत्रातील भाषा व्यिहाराचेस्िरूप ि गरज समजाि्नू दि. े

	या व्यिहार क्षेत्रातील मराठी भाषेचे स्थान स्पष्ट करि ि त्यातील मराठीच्या प्रत्यक्ष ि ापराचा अभ्यास करि. CO2: हिहिध क्षेत्रीय मराठी भाषेच्या ि ापराची कौशल्येहिकहसत करि. हिहिध लेखनप्रकारा चा अभ्यास ि प्रत्यक्ष लेखनाची कौशल्येि ापरण्यास सक्षम करि. CO3: हिहिध क्षेत्रातील कतृत्ृि ि ान व्यक्तींच्या कायाृची ि हिचारा ची ओळख करून दे ि े. CO4: हिद्यार्थयांमध्ये नैहतक, व्याि साहयक ि ि ैचाररक मल्ूया ची जोपासना करि
121 Compulsory English- II	CO1: To develop oral and written communication skills of the students so that their employability enhances. CO2: To develop overall linguistic competence and communicative skills of students
122 Financial Accounting – II	CO1: This course is intended to introduce the basic theory, concepts and practice of financial accounting and to enable students to understand information contained in the published financial statements of companies and other organizations. CO2: It includes the preparation of accounting statements, but their uses and limitations will also be emphasized.
123 Business Economics- II	CO1: To understand the basic concepts of micro economics. CO2: To understand the tools and theories of economics for solving the problem of decision making by consumers and producers. CO3: To understand the problem of scarcity and choices
124(A) 124(B) Business Mathematics and Statistics – II	CO1: To introduce the basic concepts in Finance and Business Mathematics and Statistics. CO2: To familiar the students with applications of Statistics and Mathematics in Business. CO3: To acquaint students with some basic concepts in Statistics. CO4: To learn some elementary statistical methods for analysis of data. CO5: The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods
125 Banking & Finance- II	
126 Marketing and Salesmanship- II	CO1: To help the students to prepare themselves for opportunities in marketing field. CO2: To study elaborately the process of salesmanship. CO3: To know about Rural Marketing which is an important sector in modern competitive Indian Scenario. CO4: To educate the students about the sources and relevance of Recent trends in Marketing.

Faculty of Arts
(2019 Pattern)
F.Y.B.A.

Subject	Outcomes
Marathi (मराठी साहित्य : कथाअणिभाषिक कौशल्यविकास]CC-1 A]**)**	CO1: कथा या साहित्यप्रकाराची ओळख करून देणे. CO2: कथा या साहित्यप्रकाराचे स्वरुप, घटक अणि प्रकार यांची ओळख करून देणे. CO3: विविध साहित्यप्रवाहमधील कथा या साहित्यप्रकारातील निवडक कथाचे अध्ययन करणे. CO4: भाहिक कौशल्यविकास करणे.
Marathi (एकाकिक अणि भाषिक कौशल्यविकास]CC-1 A])	
Economics G-1 (Indian Economic Environment)	CO1: To familiarize the students with the recent developments in the Indian Economy CO2: To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment. CO3: To help the students to prepare for varied competitive examinations CO4: To enable students to understand and comprehend the current business scenario, agricultural scenario and other sectorial growth in the Indian context. To make the student aware of the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO, etc. CO5: Ability to develop an understanding of the economic environment and the factors affecting economic environment. CO6: Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc. CO7: Ability to compare and contrast Indian Economy with other world economies. CO8: At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
Political Science(INTRODUCTION TO INDIAN CONSTITUTION)	CO1: To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government. CO2:To familiarize students with the working of the Constitutionof India.

Introduction to Sociology	CO1: To understand the social context of emergence of Sociology. CO2: To introduce basic sociological concepts and subject matter and perspectives of Sociology CO3: To familiarize students with new avenues in Sociology.
History(Early India: From Prehistory to the Age of the Mauryas)	CO1: The history of Early India is a crucial part of Indian history. It is a base for understanding the entire Indian history. CO2: The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Mauryas. CO3: It attempts to highlight the factors and forces behind the rise, growth and spread of civilization and culture of India along with the dynastic history. CO4: It also attempts to help the students to understand the contribution of Early Indians to polity, art, literature, philosophy, religion and science and technology. CO5: It also aims to foster the spirit of enquiry among the students by studying the major developments in early Indian history.
History(Early India: Post Mauryan Age to the Rashtrakutas)	CO1: The history of India after the Mauryas is very important to understand the developments in early India after the Mauryas, which finally led to the transition to medieval India. CO2: The course is aimed at introducing the students to the developments in different parts of India through a brief study of regional kingdoms up to the tenth century C.E. CO3: It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture. CO4: The attempt is also to instill the spirit of enquiry among the students
DSC-PSY-1A Foundations of Psychology	CO1: Understand the basic psychological processes and their applications in day to day life. CO2: Develop the ability to evaluate cognitive processes, learning and memory of an individual. CO3: Understand the importance of motivation and emotion of the individual. CO4: Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.
DSC-PSY-1B Introduction to Social Psychology	CO1: Understand the basics of social psychology. CO2: Understand the nature of self, concept of attitude and prejudice of the individual. CO1: Assess the interactional processes, love and aggression in our day today life. CO2: Understand group dynamics and individual in the social world.
Compulsory English	CO1: To expose students to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English

	CO2: To instill human values and develop the character of students as responsible citizens of the world CO3: To develop the ability to appreciate ideas and think critically CO4: To enhance employability of the students by developing their linguistic competence and communicative skills CO5: To revise and reinforce structures already learnt in the previous stages of learning.
Optional English	CO1: To expose students to the basics of literature and language and develop an integrated view about language and literature in them CO2: To acquaint them with minor forms of literature in English and help them to appreciate the creative use of language in literature CO3: To introduce them to the basics of phonology of English so that they can pronounce better and speak English correctly. CO4: To prepare students to go for detailed study and understanding of literature and language CO5: To enhance the job potential of students by improving their language skills
Social Institutions and Change	CO1: To acquaint students with basic institutions of Society with its newer dimensions. CO2: To develop critical understanding of the functioning of social institutions. CO3: To acquaint students with the concept and current versions of social change.
History(Post Mauryan Age to the Rashtrakutas)	CO1: The history of India after the Mauryas is very important to understand the developments in early India after the Mauryas, which finally led to the transition to medieval India. CO2: The course is aimed at introducing the students to the developments in different parts of India through a brief study of regional kingdoms up to the tenth century C.E. CO3: It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture. The attempt is also to instill the spirit of enquiry among the students.
Introduction to Social Psychology	CO1: Understand the basics of social psychology. CO2: Understand the nature of self, concept of attitude and prejudice of the individual. CO3: Assess the interactional processes, love and aggression in our day today life. . CO4: Understand group dynamics and individual in the social world.
Gg- 110 (A) Physical Geography	CO1: To introduce the students to the basic concepts in Physical geography. CO2: To introduce latest concept in Physical geography

	CO3: To acquaint the students with the utility and application of Physical geography in different regions and environment
Gg- 110 (B) Human Geography	CO1: To make the students aware about Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere) CO2: The geographical maturity of students in their current and future courses shall develop. CO3: The student develops theoretical, applied and computational skills.

Faculty of Science

(2019 Pattern)

F.Y.B.Sc.

Subject	Outcomes
CH-101 Physical Chemistry	CO1: Chemical Energetics i. Students will be able to apply thermodynamic principles to physical and chemical process ii. Calculations of enthalpy , Bond energy, Bond dissociation energy , resonance energy iii. Variation of enthalpy with temperature –Kirchoff's equation iv. Third law of thermodynamic and its applications CO2: Chemical Equilibrium i. Knowledge of Chemical equilibrium will make students to understand ii. Relation between Free energy and equilibrium and factors affecting on equilibrium constant. iii. Exergonic and endergonic reaction iv. Gas equilibrium, equilibrium constant and molecular interpretation of equilibrium constant v. Van't Haff equation and its application CO3: Ionic equilibria Ionic equilibria chapter will lead students to understand v. Concept to ionization process occurred in acids, bases and pH scale vi. Related concepts such as Common ion effect hydrolysis constant, ionic product, solubility product vii. Degree of hydrolysis and pH for different salts , buffer solutions
CH-102 Organic Chemistry	CO1: The students are expected to understand the fundamentals, principles, and recent developments in the subject area. CO2: It is expected to inspire and boost interest of the students towards chemistry as the main subject. CO3: To familiarize with current and recent developments in Chemistry. CO4: To create foundation for research and development in Chemistry.
CH-103 Chemistry Practical –I	CO1: Importance of chemical safety and Lab safety while performing experiments in laboratory. CO2: Determination of thermochemical parameters and related concepts. CO3: Techniques of pH measurements. CO4: Preparation of buffer solutions.

	CO5: Elemental analysis of organic compounds (non instrumental) . CO6: Chromatographic Techniques for separation of constituents of mixtures
CH-201 Inorganic Chemistry	CO1: Atomic Structure I. Various theories and principles applied to revel atomic structure II. Origin of quantum mechanics and its need to understand structure of hydrogen atom III. Schrodinger equation for hydrogen atom IV. Radial and angular part of hydrogenic wave functions V. Significance of quantum numbers VI. Shapes of orbitals CO2: Periodicity of Elements i. Explain rules for filling electrons in various orbitals- Aufbau's principle, Pauli exclusion principle, II. Hund's rule of maximum multiplicity III. Discuss electronic configuration of an atom and anomalous electronic configurations. IV. Describe stability of half-filled and completely filled orbitals. V. Discuss concept of exchange energy and relative energies of atomic orbitals VI. Design Skeleton of long form of periodic table. VII. Describe Block, group, modern periodic law and periodicity. VIII. Classification of elements as main group, transition and inner transition elements IX. Write name, symbol, electronic configuration, trends and properties. X. Explain periodicity in the following properties in details: a) Effective nuclear charge, shielding or screening effect; some numerical problems. b) Atomic and ionic size. c) Crystal and covalent radii d) Ionization energies e) Electronegativity- definition, trend, Pauling electronegativity scale. f) Oxidation state of elements CO3: Chemical Bonding i. Attainment of stable electronic configurations. ii. Define various types of chemical bonds- Ionic, covalent, coordinate and metallic bond ii. Explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and solvation energy and their importance in the context of stability and solubility of ionic

	viii. Compounds Summarize Born-Lande equation and Born-Haber cycle, ix. Define Fajan's rule, bond moment, dipole moment and percent ionic character. x. Describe VB approach, Hybridization with example of linear, trigonal, square planer, tetrahedral, TBP, and octahedral. xi. Discuss assumption and need of VSEPR theory. xii. Interpret concept of different types of valence shell electron pairs and their contribution in bonding. xiii. Application of non-bonded lone pairs in shape of molecule **xiv.** Basic understanding of geometry and effect of lone pairs with examples such as ClF3, Cl2O, BrF5,XeO3 and XeOF4.
CH- 202 Organic Chemistry	CO1: Students will learn Functional group approach for the various reactions (preparations & reactions) in context to their structur
CH- 203 Chemistry Practical –II	CO1: Inorganic Estimations using volumetric analysis. CO2: Synthesis of Inorganic compounds. CO3: Analysis of commercial products. CO4: Purification of organic compounds. CO5: Preparations and mechanism of reactions involved
MB 111 Introduction to Microbial World	CO1: To enrich students' knowledge and train them in the pure microbial sciences CO2: To introduce the concepts of application and research in Microbiology CO3: To inculcate sense of scientific responsibilities and social and environment awareness CO4: To help students build-up a progressive and successful career
MB 112 Basic Techniques in Microbiology	
MB113 Practical Course based on theory paper I and II	
MB121 Bacterial Cell and Biochemistry	
MB122 Microbial cultivation and growth	
MB123 Practical Course based on theory paper I and II	
BO 111 Plant life and utilization I	CO1: Students can understand the General identification characters of the lower cryptogams, higher cryptogams and phanerogams.

	CO2: General characteristics and classification of the Algae, fungi, lichens and Bryophytes. CO3: Life cycle of the Spirogyra, Mushrooms and Riccia with Utilization.
BO 112 Plant morphology and Anatomy	CO1: Students know about the importance of the Morphology for the identification, Nomenclature, Classification, Phylogeny and Plant breeding. CO2: Understanding about the parts, types and functions of the Inflorescence, flower and fruit. CO3: Understand the Internal organization of the plant body and different types of the tissue and its functions
BO 113 Practical based on BO 111 & BO 112	CO1: Study life cycle of the Lower and Higher cryptogamic plants with respect to morphological and Anatomical characteristics. CO2: Economic importance's of the plants. CO3: Study the Plasmolysis process of the plant. CO4: Estimation of the chlorophyll content of the plant
BO 121 Plant life and utilization II	CO1: Introduction of the Plant diversity with study of the Pteridophytes, Gymnosperms and Angiosperms. CO2: Study of the General characteristics and classification of the Pteridophytes, Gymnosperms and Angiosperms. CO3: Know the Utilization and economic importance of the Pteridophytes, Gymnosperms and Angiosperms. CO4: Study of life cycle of the Nephrolepis, Cycas
BO 122 Principles of plant science	CO1: Know the basic concepts about the plant physiology and cell biology. CO2: Understand the physiological processes like Diffusion, Imbibition, Osmosis, Plasmolysis, plant growth and growth regulators. CO3: The study of the types and Ultrastructure of the cell and different cell organelles. CO4: Study the cell cycle in plants
BO 123 Practical based on BO 121 & BO 122	CO1: Extraction of the DNA from the plant tissue. CO2: Study of the cytological techniques –Mitosis and Meiosis. CO3: Documentation of the biodiversity
ZO-111 Animal Diversity I	CO1: The student will be able to understand classify and identify the diversity of animals. CO2: The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.

	CO3: The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life
ZO-112 Animal Ecology	CO1: The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population. CO2: To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature. CO3: The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community. CO4: The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components. CO5: The working in nature to save environment will help development of leadership skills to promote betterment of environment.
ZO-113 Zoology Practical Paper	CO1: The student will be able to understand classify and identify the diversity of animals. CO2: The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.
ZO-121 Animal Diversity II	CO1: The student will be able to understand classify and identify the diversity of animals. CO2: The student understands the importance of classification of animals and classifies them effectively using the six levels of classification. CO3: The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life
ZO-122 Cell Biology	CO1: The learner will understand the importance of cell as a structural and functional unit of life. CO2: The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development. CO3: The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life. CO4: The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy.
ZO-123	CO1: The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional

Zoology Practical Paper	and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population

IQAC Coordinator

Principal