BHARATIYA JAIN SANGHATANA'S ARTS, SCIENCE, COMMERCE COLLEGE, WAGHOLI, PUNE -412 207

COURSE OUTCOME ACADEMIC YEAR 2023-24

DEPARTMENT OF BACHELOR OF BUSINESS ADMINISTRATION IN COMPUTER APPLICATION		
Course Title	**CO No.**	**Course Outcomes**
Business Communication (CA-101)	**CO-1**	To understand what is the role of communication in personal and business worlds
	CO-2	To understand system and communication and their utility
	CO-3	To develop proficiency in how to write business letters and other communications
	CO-4	Apply the managerial functions in different business setup
	CO-5	Implement decisions to ensure organizational effectiveness
Principles of Management (CA-102)	**CO-1**	Interpret and design the different forms of organization
	CO-2	Demonstrate social responsibility and ethical issues involved in business situations and organizations
	CO-3	Integrate management principles in real time situations
	CO-4	Apply the managerial functions in different business setup
	CO-5	Implement decisions to ensure organizational effectiveness
C Programming (CA-103)	**CO-1**	To understand the concept of Procedural Programming
	CO-2	To acquire basic programming skills using C ProgrammingLanguage
	CO-3	Students will Improve logical thinking through practical knowledge of C Programming

	CO-4	By learning the basic programming constructs they can easilySwitch over to any other language in future.
Database Management System (CA-104)	**CO-1**	To understand role and importance File Structures and Organization
	CO-2	To develop skills related with Database basic Concepts.
	CO-3	To Develop right understanding of various Data models
	CO-4	To Understand the Programming in SQL and Implementation
	CO-5	To Learn about Relational Database Designing.
Statistics (CA-105)	**CO-1**	To understand role and importance of statistics in various business situations
	CO-2	To develop skills related with basic statistical technique
	CO-3	Develop right understanding regarding regression, correlation and data interpretation
Computer Laboratory Based on 103 &104 (CA-106)	**CO-1**	To assess the knowledge of student in C and DBMS
	CO-2	To acquire knowledge on writing computer programs using C Language
	CO-3	To create and manage Database using SQL
Principles of programming and algorithm (CA-107)	**CO-1**	To develop analytical /logical thinking and problem solvingcapabilities
	CO-2	To know the fundamentals of programming and designing.
	CO-3	To learn the algorithm analysis and notations
	CO-4	To understand the concept, problem and algorithm.
Organization Behavior & Human Resource Management (CA-201)	**CO-1**	To understand basic concept of HRM & OB
	CO-2	To know the major trends in HRM & OB
	CO-3	To make aware students about on the job & Off the JobTraining methods

	CO-4	To understand basic concept of HRM & OB
Financial Accounting (CA-202)	**CO-1**	To develop right understanding regarding role and importance of monetary and financial transactions in business
	CO-2	To cultivate right approach towards classifications of differenttransactions and their implications
	CO-3	To develop proficiency preparation of basic financial as to how towrite basis accounting statement - Trading and P&L
Business Mathematics (CA-203)	**CO-1**	To understand role and importance of Mathematics in variousbusiness situations and while developing softwares.
	CO-2	To develop skills related with basic mathematical technique
Relational database management System. (CA-204)	**CO-1**	Enables students to understand relational database concepts.
	CO-2	Enables students to understand transaction management concepts in database system.
	CO-3	Enables student to write PL/SQL programs that use: procedure,function, package, cursor and trigger.
	CO-4	To Understand SQL/PLSQL the programming languageof oracle
	CO-5	Get Fundamental Knowledge of subject in Brief along with Software.
Web Technology HTML-JS-CSS (CA-205)	**CO-1**	To know & understand concepts of internet programming.
	CO-2	To understand how to develop web based applications using JavaScript
Computer Laboratory Based on 204 & 205 (CA-206)	**CO-1**	To assess the knowledge of student in RDBMS and WebTechnology
	CO-2	To acquire knowledge on writing computer programs usingconcept of Web Technology
	CO-3	To create and manage Database using concept of RDBMS
Add On (Advance C) (CA-207)	**CO-1**	To study advanced concepts of programming using the „C"Language.
	CO-2	To understand code organization with complex data types andstructures.

	CO-3	To work with files.
Digital Marketing (CA-301)	**CO-1**	The aim of this syllabus is to give knowledge about using digital marketing in and as business.
	CO-2	To make SWOT analysis, SEO optimization and use of variousdigital marketing tools.
	CO-3	To understand Case study and Exercise on various terms
	CO-4	To understand Digital marketing for business purpose
Data Structure (CA-302)	**CO-1**	To understand the concept of ADT‟s.
	CO-2	To learn linear data structures – lists, stacks, and queues.
	CO-3	To understand sorting, searching and hashing algorithms.
	CO-4	To apply Tree and Graph structures.
Software Engineering (CA-303)	**CO-1**	To understand system concepts.
	CO-2	To understand Software Engineering concepts.
Angular – JS (CA-304)	**CO-1**	By the end of this course, the students should be able to Understand Client Side MVC and SPA
	CO-2	Explore Angular JS Component
	CO-3	Develop an Angular JS Single Page Application
	CO-4	Apply filter in Angular JS application
	CO-5	By the end of this course, the students should be able to Understand Client Side MVC and SPA
Big Data (CA-305)	**CO-1**	To enable learners to develop expert knowledge and analytical skills in current and developing areas of analysis statistics, andmachine learning
	CO-2	To enable the learner to identify, develop and apply detailedanalytical, creative, problem solving skills.

	CO-3	Provide the learner with a comprehensive platform for career development, innovation and further study.
Computer Laboratory Based on 302 , 304 and 305 (CA-306)	**CO-1**	To assess the knowledge of student in Data Structure, AngularJS and R programming
	CO-2	To acquire knowledge on writing computer programs usingconcept of Data Structure , Angular JS and R programming
	CO-3	To create and manage Applications using Data Structure , Angular JS and R programming
Basic Course in Environmental Awareness (CA-307)	**CO-1**	Provide an opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improvethe environment
	CO-2	To develop conscious towards a cleaner and better managed Environment
Networking (CA-401)	**CO-1**	To gain knowledge about Computer Networks concepts.
	CO-2	To know about working of networking models, addresses, transmission medias and connectivity devices.
Object Oriented Concepts Through CPP (CA-402)	**CO-1**	Acquire an understanding of basic object-oriented concepts andthe issues involved in effective class design.
	CO-2	Enable students to write programs using C++ features like operator overloading, constructor and destructor, inheritance,polymorphism and exception handling.
Operating System (CA-403)	**CO-1**	To know the services provided by Operating System
	CO-2	To know the scheduling concept
	CO-3	To understand design issues related to memory management andvarious related algorithms.
	CO-4	To understand design issues related to File management andvarious related algorithms
Computer Laboratory	**CO-1**	To assess the knowledge of student in CPP and Adv. PHP

Based on 402 and 404(406)	**CO-2**	To acquire knowledge on writing computer programs usingconcept of CPP and Adv. PHP
	CO-3	To create and manage Applications using CPP and Adv. PHP
Cyber Security (CA-501)	**CO-1**	To understand the fundamentals of cyber security.
	CO-2	To understand various categories of Cybercrime, Cyber-attacks onmobile, tools and techniques used in Cybercrime and case studies.
	CO-3	To have an overview of the Cyber laws and concepts of Cyber Forensics.
Object Oriented Software Engineering (CA-502)	**CO-1**	To understand the fundamentals of object modeling
	CO-2	To understand and differentiate Unified Process from other approaches.
	CO-3	To design with static UML diagrams.
	CO-4	To design with the UML dynamic and implementation diagrams.
	CO-5	To improve the software design with design patterns.
	CO-6	To test the software against its requirements specification.
Core Java (CA-503)	**CO-1**	To introduce the object oriented programming concepts.
	CO-2	To understand object oriented programming concepts, and apply themin solving problems.
	CO-3	To introduce the principles of inheritance and polymorphism; and demonstrate how they relate to the design of abstract classes
	CO-4	To introduce the implementation of packages and interfaces
	CO-5	To introduce the concepts of exception handling and multithreading.
	CO-6	To introduce the design of Graphical User Interface using applets and swing controls.
Python (CA-504)	**CO-1**	Define and demonstrate the use of built-in data structures “lists”and “dictionary”.

	CO-2	Design and implement a program to solve a real world problem.
	CO-3	Design and implement GUI application and how to handle exceptionsand files.
Project (CA-505)	**CO-1**	Students can express their ideas clearly and effectively, bothverbally and in written form.
	CO-2	Students can work as a team to achieve common goals.
	CO-3	Students are able to make links across different areas of knowledge and to generate, develop and evaluate ideas and Information related to the project.
	CO-4	Students are able to learn on their own, reflect on their learningand improve upon it.
Computer Laboratory Based on 502 and 503 (CA-506)	**CO-1**	To assess the knowledge of student in Java Programming,Python
	CO-2	To acquire knowledge on writing computer programs usingconcept of Java Programming, Python
	CO-3	To create and manage Applications using Java Programming,Python
Ad-on Internet of Things (IoT) (CA-507)	**CO-1**	To understand Technical aspects of Internet of things.
	CO-2	To describe smart objects and IoT Architecture.
	CO-3	To study and compare different Application protocols of IoT.
	CO-4	To understand IoT platform using Arduino Uno.
Recent Trends in IT (CA-601)	**CO-1**	To discuss the basic concepts AI.
	CO-2	To apply basic, intermediate and advanced techniques to minethe data.
	CO-3	To provide an overview of the concept of Spark programming.
Software Testing	**CO-1**	Students will be introduced to testing tools.

(CA-602)	**CO-2**	Students will acquire Knowledge of Basic SQA.
	CO-3	Students will be able to design basic Test Cases.
Advanced Java (CA-603)	**CO-1**	Students will know the concepts of JDBC Programming.
	CO-2	Students will know the concepts of Multithreading and Socket Programming.
	CO-3	Students will know the concepts of Spring and Hibernate.
	CO-4	Students will develop the project by using JSP and JDBC.
	CO-5	Students will develop applications in Spring and hibernate
Dot Net Framework (CA-604)	**CO-1**	Understand the features of Dot Net Framework, VB,C#, and ASP.
	CO-2	Design and develop window-based and web-based .NET Applications.
	CO-3	Design and Implement database connectivity usingADO.NET for VB, C#, and ASP.
	CO-4	Design and develop a Website.
Project (ca-605)	**CO-1**	Students can express their ideas clearly and effectively, bothverbally and in written form.
	CO-2	Students can work as a team to achieve common goals.
	CO-3	Students are able to make links across different areas of Knowledge and to generate, develop and evaluate ideas and information related to the project.
	CO-4	Students are able to learn on their own, reflect on their learningand improve upon it.

DEPARTMENT OF BACHELOR OF BUSINESS COMPUTER APPLICATION

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Business Communicati	**CO-1**	It improves various skills of students such as linguistic, non-linguistic etc.

onSkills (101)	**CO-2**	Students learn the basic concepts of business communicationsuch as formal communication, informal communication etc.
	CO-3	It enhances the students‟ ability to read, write, listen andspeak effectively.
	CO-4	Students observe and apply different Communication skills inday to day life.
Principle of Managemen (102)	**CO-1**	Students learn the conceptual knowledge about nature,complexity, functions of management etc.
	CO-2	Students understand the different aspects of principles ofmanagement given by different authors.
	CO-3	Students learn the importance of management of change,crisis, TQM, Stress Management etc.
	CO-4	It helps to apply Henry Fayol‟s principles in Day to day workinglife.
C Language (103)	**CO-1**	Ability to improve logical thinking throughpractical knowledge of C Programming.
	CO-2	Able to develop logic for writing programs usingControl Structures, Arrays, and Functions.
	CO-3	Able to develop small real-life applications usingC.
Database Management System (104)	**CO-1**	Ability to obtain the basic knowledge ofDatabase Management Systems.
	CO-2	Able to gain knowledge of creation, manipulation and querying of data in databases.
	CO-3	Able to normalize the database design.
	CO-4	Able to develop an E-R model based on userrequirements
Statistics (105)	**CO-1**	Students learn the basic concepts of statistics.
	CO-2	Students understand to calculate various types of averagesand variation.
	CO-3	Students understand how the different statistical conceptscan be applied in different industries differently.
	CO-4	It inculcates the research culture among

Computer Laboratory based on CA-103 andCA-104 (106)	**CO-1**	Ability to develop and implement computer programs using C Language.
	CO-2	Able to create and manipulate databasesusing SQL.
	CO-3	Understand how to write, debug andexecute simple programs in C
Organization Behavior and Human Resource Management (201)	**CO-1**	Ability to develop strategies for organizational change and development.
	CO-2	Able to make aware students of traditional &modern methods of procurement & development in the organization.
	CO-3	Able to explore the major trends inHRM & OB.
Financial Accounting (202)	**CO-1**	Ability to develop skills for basicaccounting.
	CO-2	The course will impart knowledge ontransaction management and record-keeping.
	CO-3	Cultivate the right approach towards classifications ofdifferent transactions and their implications.
	CO-4	Develop proficiency in the preparationof basic financial and accounting statements
Business Mathematics (203)	**CO-1**	Ability to analyze and interpretmathematical results.
	CO-2	To understand the role and importance of Mathematicsin various business situations and while developing software.
Relational Database (204)	**CO-1**	\Able to acquire a good formal foundation on therelational modelof data and usage of Relational Databases.
	CO-2	Enables the student to write PL/SQL programs that use procedure, function, package, cursor and trigger.
	CO-3	Able to use advanced database Programming concepts.
WebTechnology HTML-JavaScript-CSS	**CO-1**	Ability to design more attractive Web pages using CSS.
	CO-2	Ability to develop interactive websites using JavaScript.

(205)	**CO-3**	Understand how to develop web-based applications using JavaScript.
Computer Laboratory Basedon204 and 205 (206)	**CO-1**	Able to manage relational databases using SQL.
	CO-2	Ability to write simple and nested queries using SQL.
	CO-3	Ability to write PL/SQL programs that uses procedure, function, package, cursor, and trigger.
	CO-4	Ability to design web pages using HTML,CSS and JavaScript
Digital Marketing (301)	**CO-1**	Familiarity with working of E-Commerce and understand B-B, C-B, C-Relationship.
	CO-2	Able to understand the basics of SEO (Search Engine Optimization) and better understanding between Digital and Real Marketing.
	CO-3	Understanding of Digital Marketing types and gaining practical knowledge of its usage through the Internet, Social Media and Mobile, Email. Designing effective content for digital marketing using various Digital Marketing tools.
	CO-4	Developing an effective marketing strategy using CRM.
Data Structure (302)	**CO-1**	Able to understand the concepts of ADTs.
	CO-2	Develop skills in the implementation and application of different types of data structures.
	CO-3	To understand basic algorithms related to sorting, searching and hashing.
	CO-4	To understand the concept of different memory allocation techniques.
	CO-5	Apply algorithm and data structure in various real-life software problems.
Software Engineering (303)	**CO-1**	Able to understand concepts of Systems and their types.
	CO-2	Able to understand software engineering concepts and their applications.
	CO-3	Develop the ability to gain knowledge of the SDLC process.

	CO-4	Ability to understand the concept of Re-Engineering and Reverse Engineering.
	CO-5	Knowledge of different types of software development models such as waterfall, spiral, and prototyping.
	CO-6	Understand the concept of testing and its types.
PHP (304)	**CO-1**	Ability to develop interactive data-driven dynamic websites.
	CO-2	Understand how server-side programming works on the web.
	CO-3	To understand Session and Cookie concept.
	CO-4	To implement database connectivity.
Angular JS (305)	**CO-1**	Empower students to create a web application that depends on Client-Side MVC & SPA.
	CO-2	To study the use of various Angular JS Components.
	CO-3	Ability to understand the concepts of Java Script and its implementation.
	CO-4	Create and bind controllers with JavaScript and apply the filter in the Angular JS application.
Big Data (306)	**CO-1**	Able to understand the basic techniques such as R programming that form the foundations of Big Data.
	CO-2	Ability to acquire knowledge in specialized aspects of big data including big data applications and big data analytics.
	CO-3	To understand the building blocks of Big Data and specialized aspects of big data with the help of different big data applications.
	CO-4	Explore the area of specialization in Data Science and be able to represent the analytical aspects of Big Data.
	CO-5	Able to summarize data using exploratory data analysis and visualization using graphs.
Blockchain (306)	**CO-1**	Understand what and why of Block chain.
	CO-2	Explore the major components of Block chain.

	CO-3	Learn about Bitcoin, Cryptocurrency and Ethereum.
	CO-4	Deploy and exercise example smart contracts.
	CO-5	Identify a use case for a Blockchain application.
	CO-6	Create your Blockchain network application.
Networking (401)	**CO-1**	Obtain knowledge about Computer Network concepts.
	CO-2	Gain Knowledge about working of networking models, addresses, transmission media and Connectivity devices.
	CO-3	To acquire information about network security and cryptography.
Object-Oriented Concepts through CPP (402)	**CO-1**	Acquire an understanding of basic object-
	CO-2	Oriented concepts and the issues involved ineffective class design.
	CO-3	Develop programming skills using C++ features.
	CO-4	Able to use various object-oriented concepts used to solve real-life problems.
Operating System (403)	**CO-1**	Understand fundamental operating system
	CO-2	abstraction such as process, semaphore, threads etc.
	CO-3	To know the services provided by Operating System.
	CO-4	Analyze process scheduling, CPU Scheduling, and memory management algorithms.
Node – JS (404)	**CO-1**	Understand the JavaScript and technical concepts behind Node JS.
	CO-2	Structure a Node application in modules.
	CO-3	Understand and use the Event Emitter, Buffers,Streams and Pipes.

	CO-4	Build a Web Server in Node and understand how it works.
	CO-5	Ability to understand how to connect with SQL or Mongo database in Node.
Advance PHP (405)	**CO-1**	To know & understand concepts of internet programming.
	CO-2	Understand how server-side programming works on the web.
	CO-3	Able to understand how to use PHP Frameworks like (Joomla / Drupal)
Cyber Security (501)	**CO-1**	Have a good understanding of Cyber Security and the Tools.
	CO-2	To acquire basic information on Cyber Security and Cybercrime.
	CO-3	Have a good understanding of Cyber laws.
	CO-4	To develop Cyber forensics awareness.
	CO-5	Identify attacks, security policies and credit card frauds in the mobile and Wireless Computing Era.
Object-Oriented Software Engineering (502)	**CO-1**	Able to give Design Specifications for Project.
	CO-2	Acquire Knowledge in Basic Modeling.
	CO-3	Ability to acquire Project Management Skills.
	CO-4	Able to understand the fundamentals of object modeling
	CO-5	Design different UML diagrams.
	CO-6	Improve the software design with design patterns.
Core Java (503)	**CO-1**	Able to solve real-world problems using OOP techniques.
	CO-2	Able to solve problems using java collection framework and I/O classes

	CO-3	Develop applets for web applications.
	CO-4	Design GUI-based applications.
	CO-5	Ability to understand the use of file concepts.
MongoDB (504)	**CO-1**	Ability to work with Mongo DB shell and Mongo DB tools.
	CO-2	Able to do Schema design, Data modeling, and all sorts of CRUD Operations.
	CO-3	Able to apply various techniques to optimize query performance.
	CO-4	Analyse the data stored in Mongo DB.
Python (504)	**CO-1**	Understand the need and importance of Python language.
	CO-2	Able to learn how to design and implement Python applications.
	CO-3	Design and implement a program to solvea real-world problem
	CO-4	Design and implement GUI application
	CO-5	Gain knowledge of handling the concepts of exceptions and files.
(DSE) Project (505)	**CO-1**	Undertake problem identification, formulation and solution.
	CO-2	Understand project characteristics and various stages of project development.
	CO-3	Design solutions to complex problems.
	CO-4	Gain a sound technical knowledge of selected project development platforms.
	CO-5	Developed enhance coding skills.
Computer Laboratories	**CO-1**	Define and demonstrate the use of GUI Programming concepts.

Based on (503 and 504) (2 credits each) (506)	**CO-2**	Design and implement a program to solve a real-world problem.
	CO-3	Design and implement classes and methods.
	CO-4	Implementation of exception handling using packages.
Recent Trends in IT (601)	**CO-1**	Able to understand basic concepts of AI.
	CO-2	To apply basic, intermediate and advanced techniques to mine the data.
	CO-3	To provide an overview of the concept of Spark programming.
Software Testing (602)	**CO-1**	Acquire knowledge of testing tools.
	CO-2	Understand the basic concepts of SQA.
	CO-3	Able to design and implement the basic Test Cases.
Advanced Java (603)	**CO-1**	Able to understand the concepts of JDBC Programming, Multithreading and Socket Programming.
	CO-2	Ability to understand the concepts of spring and Hibernate, JSP and JDBC.
	CO-3	Develop applications in spring and hibernate.
	CO-4	Design website by using JDBC and JSP.
	CO-5	Develop different types of Servlet applications
Android Programming (604)	**CO-1**	Able to write simple GUI applications, use built-in widgets and components, work with the database to store data locally, and much more.
	CO-2	Demonstrate their understanding of the fundamentals of Android operating systems.
	CO-3	Demonstrate their skills in using Android software development tools
Dot Net Framework	**CO-1**	Understand the features of Dot Net Framework, VB,C#, and ASP.

(604)	**CO-2**	Design and develop window-based and web-based .NET Applications.
	CO-3	Design and Implement database connectivity usingADO.NET for VB, C#, and ASP..
	CO-4	Design and develop a Website.
(DSE) Project (605)	**CO-1**	Acquire Project development and management skills.
	CO-2	Able to implement design and coding techniques.
	CO-3	Students will be able to apply test cases and testing techniques in the project.
Computer Laboratory Based on 603 and 604 (2 credits each) (606)	**CO-1**	Ability to develop different types of chatting applications by using Socket programming.
	CO-2	Able to develop and design different types of websites.
	CO-3	Able to develop the project by using spring and Hibernate.
	CO-4	To Understand Applications of widgets and components.
DEPARTMENT OF GEOGRAPHY		
Course Title	**Code**	Course Outcomes
<u>Geography</u>	**CO-1**	Students of all undergraduate general degree programs should have acquired the following abilities/ values at the time of graduation:
	CO-2	Define and develop the interdisciplinary approach through the study of Geography
	CO-3	Enhance employability and entrepreneur skills among the students.
	CO-4	Demonstrate and appreciate the importance of diverse cultural, economic, regional, and resources perspective.
	CO-5	Realization the importance of relation between Geography and various branches of Humanities, mental moral sciences.

	CO-6	Demonstrate and understand the important concept and theories in the field of Geography. Subject specific
	CO-7	Demonstrate knowledge of physical and cultural features of the earth surface.
	CO-8	Define basic disciplines of Geography and its sub branches.
	CO-9	Discuss the basic concepts and terminologies used in Geography like interior of the earth, plate tectonic, sea floor spreading, population growth, disasters, composition and structure of atmosphere, hydrosphere, etc.
	CO-10	Distinguish between minerals and rocks, weather and climate, interior of the earth, basic industries, farming etc.
	CO-11	Describe the causes and effects of local, national and international problems like global warming, acid rain, ozone depletion, soil degradation, deforestation etc. Institutional
	CO-12	Encourage to develop overall personality with soft skills and vocational competence among the students
	CO-13	Enhance and rediscover knowledge skills and holistic approach towards life
DEPARTMENT OF ECONOMICS		
Course Title	**Code**	Course Outcomes
ECONOMICS	**CO-1**	To familiarize with fundamentals of modern financial system.
	CO-2	To help the students to prepare for varied competitive examinations.
	CO-3	To familiarize students with various concepts of national income.
	CO-4	To introduce students to the role of money in an economy.
	CO-5	To facilitate the development of research aptitude in students.
DEPARTMENT OF MARATHI		
Course Title	**Code**	**Course Outcomes**

F.Y.B.A. SEM-I (Marathi)	**CO-1**	Understanding the interrelation between literature and society.
	CO-2	Explaining the nature of Language and Literature.
	CO-3	Obtaining the skills of literary criticism.
	CO-4	Imbuing the essay writing skills.
	CO-5	Illustrating the nature of literary forms like one-act-play, travelogue and short-story.
B.A. SEM-II (Marathi)	**CO-1**	Introduction of medieval Marathi language and literature.
	CO-2	Introduction of the contemporary literary works.
	CO-3	Acquiring the skill of translation.
	CO-4	Explanation of the need and significance of editing
B.A.III G3 (Marathi) Poetry	**CO-1**	Acquaintance with oriental poetry.
	CO-2	Understanding the nature and features of poetry's.
	CO-3	Acquaintance with oriental poetry.
	CO-4	Developing the poetic devices and their uses.
	CO-5	Creating the skills of critical appreciation of poem
B.A.III S4 Linguistics	**CO-1**	Getting acquainted with modern linguistics.
	CO-2	Understanding origin, nature and function of language.
	CO-3	Getting information about phonetics.
	CO-4	Enhancing the interest in Marathi Language.

B.A.III S3 Medieval Marathi Literature	**CO-1**	Introduction of the historical survey of medieval Marathi literature.
	CO-2	Introduction of the literary forms in medieval literature.
	CO-3	Explanation of the trends and structure of medieval Marathi Literature.
Marathi III Utility and Creativity of Marathi Language	**CO-1**	Understanding the formal and informal language.
	CO-2	Developing various language skills.
	CO-3	Getting motivation for creative writing.
	CO-4	Understanding the technique of mass communication.
B.A.III Literary Criticism:	**CO-1**	Introduction to various trends in literary criticism.
	CO-2	Understanding various trends in Dalit literature.
T.Y.B.A. MARATHI Sem V G3 -- BHASHIK KAUSHALYVIKAS AANI ADHUNIK MARATHI SAHITYA PRAKAR: PRVASVARNAN	**CO-1**	Acquiring writing skills for print media.
	CO-2	To understanding the nature, motivation, purpose, features and movement of the literary genre.

	CO-3	To understand taste and analyse the assigned travelogue.
Sem VI G3— BHASHIK KAUSHALYVIKAS AANI MARATHI SAHITYA PRAKAR: KAVITA	**CO-1**	To learn about Marathi literature, language skills development and governance.
	CO-2	To understanding the nature, movement, motivation, tendency and features of this genre of poetry.
	CO-3	Assessing, testing and analyzing selected poems from the designated textbook
	CO-4	To get acquainted with the various inventions in the genre of poetry and the form of language on the basis of the poems of the textbook
S3— MADHYYUGIN MARATHI VANGMAUACHA STHUL ITIHAS PRARAMBH TE 1600	**CO-1**	To understand concept form, motivation, tendency of the growing history.
	CO-2	Understanding the social and cultural background of the medieval period.
	CO-3	To understand the chronological history of Marathi language and literature.
S4— VARNNATMAK BHAHAVIDNYAN **Sem-V**	**CO-1**	Explain the nature, features and function of language.
	CO-2	Explain the need for language study.
	CO-3	Brief introduction to the branches and various methods of language study.
	CO-4	Understanding the structure of the senses and the process of self-creation.
	CO-5	To understand the science of self, self-thought and self-system of Marathi.
Sem VI	**CO-1**	To understand morphology and morphology of Marathi.
	CO-2	By introducing syntax and syntax in the context of Marathi language introducing the concept of semantics through linguistic organs.
DEPARTMENT OF HINDI		
Course Title	**Code**	**Course Outcomes**
F.Y.B.A. SEM-I (Hindi)	**CO-1**	Understanding the interrelation between literature and society.
	CO-2	Explaining the nature of Language and Literature.

	CO-3	Obtaining the skills of literary criticism.
	CO-4	Imbuing the essay writing skills
	CO-5	Illustrating the nature of literary forms like one-act-play, travelogue and short-story.
B.A. SEM-II (Hindi)	**CO-1**	Introduction of medieval Hindi language and literature.
	CO-2	Introduction of the contemporary literary works
	CO-3	Acquiring the skill of translation.
	CO-4	Explanation of the need and significance of editing
S.Y.B.A.(G2) SEM-III (Hindi) Poetry	**CO-1**	Acquaintance with oriental poetry.
	CO-2	Understanding the nature and features of poetry.
	CO-3	Creating the skills of critical appreciation of poems.
	CO-4	Developing the poetic devices and their uses
SEM-III (S1) Linguistics:	**CO-1**	Getting acquainted with modern linguistics
	CO-2	Understanding origin, nature and function of language.
	CO-3	Enhancing the interest in Hindi Language
SEM-III (S2) Medieval Hindi Literature:	**CO-1**	Introduction of the historical survey of medieval Hindi literature
	CO-2	Introduction of the literary forms in medieval literature
	CO-3	Explanation of the trends and structure of medieval Hindi Literature.
III Utility and Creativity of	**CO-1**	Understanding the formal and informal language

Hindi Language	**CO-2**	Developing various language skills.
	CO-3	Getting motivation for creative writing.
	CO-4	Understanding the technique of mass communication
TYBA HINDI (G3) Kathher Gadya Sahitya Sem-V	**CO-1**	To make students aware of memoir literature.
	CO-2	To make students aware of Resvachitra literature
	CO-3	To develop students from the point of view of evaluation.
	CO-4	To develop the development of meeting chronicle writing skills.
	CO-5	Build dialogue-writing skills
Sem-VI Ghazal literature	**CO-1**	To make students aware of Ghazal literature.
	CO-2	To make the students aware of the personality of the Ghazalkar.
	CO-3	To develop the attitude of assessment to the students.
	CO-4	To make students aware of government letter writing.
S4 Sem-V	**CO-1**	Introducing the nature of linguistics.
Bhasha Vighyan	**CO-2**	To explain the scope of Linguistics to the students.
	CO-3	Introducing the directions of linguistics
	CO-4	To explain the application aspect of linguistics.
	CO-5	To explain the utility of linguistics in the study of literature

Sem-VI Hindi Bhasha our Vikas	**CO-1**	Introducing the nature of linguistics.
	CO-2	To explain the scope of Linguistics to the students.
	CO-3	Introducing the directions of study of linguistics.
	CO-4	Explaining the Application aspect of Linguistics.
	CO-5	To explain the utility of linguistics in the study of literature
S3 Sem-V History of Hindi Literature	**CO-1**	To acquaint the students with the background of modern times
	CO-2	To make students aware of the poetry of Bharattendu era
	CO-3	To get acquainted with the creators of the modern period.
	CO-4	To sensitize the students about the origin and development of Hindi poetry.
Sem-VI History of Hindi Literature	**CO-1**	Introduction to Hindi Literature Writing
	CO-2	To introduce the period division and nomenclature of Hindi literature.
	CO-3	To get acquainted with the compositions of the ancient, devotional, ritual, creators
Chemistry		
Course Title	**Code**	**Course Outcomes**
FYBSc	**CO-1**	Students will be able to apply thermodynamic principles to physical and chemical process
	CO-2	Calculations of enthalpy , Bond energy, Bond dissociation energy , resonance energy
	CO-3	Variation of enthalpy with temperature –Kirchoff‟s equation
	CO-4	Third law of thermodynamic and its application

	CO-5	Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
	CO-1	Exergonic and endergonic reaction
	CO-2	Gas equilibrium, equilibrium constant and molecular interpretation of equilibrium constant
	CO-3	Van‟t Haff equation and its application
	CO-4	Concept to ionization process occurred in acids, bases and pH scale
	CO-5	Related concepts such as Common ion effect hydrolysis constant, ionic product, solubility product
	CO-1	Degree of hydrolysis and pH for different salts , buffer solutions
	CO-2	After completing the course work learner will be acquired with knowledge of chemical energetics,
	CO-3	Chemical equilibrium and ionic equilibria.
CH-102 Organic Chemistry	**CO-1**	The students are expected to understand the fundamentals, principles, and recent developments in the subject area.
	CO-2	It is expected to inspire and boost interest of the students towards chemistry as the main subject.
	CO-3	To familiarize with current and recent developments in Chemistry.
	CO-4	To create foundation for research and development in Chemistry
	CO-5	Students will learn Fundamentals of organic chemistry, stereochemistry (Conformations, and nomenclatures) and functional group approach for aliphatic hydrocarbons
CH-103 Chemistry Practicals Course –I	**CO-1**	Importance of chemical safety and Lab safety while performing experiments in laboratory
	CO-2	Determination of thermochemical parameters and related concepts
	CO-3	Techniques of pH measurements

	CO-4	Preparation of buffer solutions
	CO-5	Elemental analysis of organic compounds (non instrumental)
	CO-6	Chromatographic Techniques for separation of constituents of mixtures
	CO-7	Students will learn quantum mechanical approach to atomic structure, Periodicity of elements, various theories for chemical bonding.
	CO-8	The practical course is in relevance to the theory courses to improve the Understanding of the concepts
	CO-9	It would help in development of practical skills of the students.
CH-201 Inorganic Chemistry	**CO-1**	Various theories and principles applied to revel atomic structure
	CO-2	Origin of quantum mechanics and its need to understand structure of hydrogen atom
	CO-3	Schrodinger equation for hydrogen atom
	CO-4	Radial and angular part of hydro genic wave functions
	CO-5	Significance of quantum numbers
	CO-6	Shapes of orbitals
	CO-7	Explain rules for filling electrons in various orbitals- Aufbau‟s principle, Pauli exclusion principle, Hund‟s rule of maximum multiplicity
	CO-8	Discuss electronic configuration of an atom and anomalous electronic configurations
	CO-9	Describe stability of half-filled and completely filled orbitals.
	CO-10	Discuss concept of exchange energy and relative energies of atomic orbitals
	CO-11	Design Skeleton of long form of periodic table.
	CO-12	Describe Block, group, modern periodic law and periodicity.
	CO-13	Classification of elements as main group, transition and inner transition elements
	CO-14	Write name, symbol, electronic configuration, trends and properties.

	CO-15	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
	CO-16	Attainment of stable electronic configurations.
	CO-17	Define various types of chemical bonds- Ionic, covalent, coordinate and metallic bond
	CO-18	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 compounds
	CO-19	Summarize Born-Lande equation and Born-Haber cycle,
	CO-20	Define Fajan‟s rule, bond moment, dipole moment and percent ionic character.
	CO-21	Describe VB approach, Hybridization with example of linear, trigonal, square planer, tetrahedral, TBP, and octahedral.
	CO-22	Discuss assumption and need of VSEPR theory.
	CO-23	Interpret concept of different types of valence shell electron pairs and their contribution in bonding.
	CO-24	Application of non-bonded lone pairs in shape of molecule
	CO-25	Basic understanding of geometry and effect of lone pairs with examples such as ClF3, Cl2O, BrF5, XeO3 and XeOF4.
	CO-26	Students will know about basics of analytical chemistry, some techniques of analysis and able to do calculations essential for analysis.
CH-202 Analytical Chemistry	**CO-1**	Analytical Chemistry –branch of chemistry
	CO-2	Perspectives of analytical Chemistry
	CO-3	analytical problems
	CO-4	Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution
	CO-5	Relation between molecular formula and empirical formula
	CO-6	Stoichiometric calculation
	CO-7	Define term mole, millimole, molar concentration, molar equilibrium concentration and Percen Concentration.

	CO-8	SI units, distinction between mass and weight
	CO-8	Units such as parts per million, parts per billion, parts per thousand, solution-dilatant volume ratio, function density and specific gravity of solutions Basics of type determination, characteristic tests and classifications, reactions of different functional groups.
	CO-9	Separation of binary mixtures and analysis
	CO-10	Elemental analysis -Detection of nitrogen, sulfur, halogen and phosphorous by Lassiagen‟s test
	CO-11	Purification techniques for organic compounds.
	CO-12	Basics of chromatography and types of chromatography
	CO-13	Theoretical background for Paper and Thin Layer Chromatography
	CO-14	pH meter and electrodes for pH measurement
	CO-15	Measurement of pH
	CO-16	Working of pH meter
	CO-17	Applications of pH meter
CH- 203: Chemistry Practical –II	**CO-1**	Inorganic Estimations using volumetric analysis
	CO-2	Synthesis of Inorganic compounds
	CO-3	Analysis of commercial products
	CO-4	Purification of organic compounds
	CO-5	Preparations and mechanism of reactions involved
	CO-6	The practical course is in relevance to the theory courses to improve the Understanding of the concepts.
	CO-7	It would help in development of practical skills of the students
SYBSc CH-301 Physical and Analytical Chemistry	**CO-8**	Use of micro scale techniques wherever required
	CO-1	Define / Explain concept of kinetics, terms used, rate laws, molecularity, order.
	CO-2	Explain factors affecting rate of reaction
	CO-3	Explain / discuss / derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions.
	CO-4	Determination of order of reaction by integrated rate equation method, graphical method, half-life method and differential method

	CO-5	Explain / discuss the term energy of activation with the help of energy diagram.
	CO-6	Explanation for temperature coefficient and effect of temperature on rate constant k.
	CO-7	Derivation of Arrhenius equation and evaluation of energy of activation graphically
	CO-8	Derivations of collision theory and transition state theory of bimolecular reaction and comparison
	CO-9	Solve / discuss the problem based applying theory and equations.
	CO-10	Define / explain adsorption, classification of given processes into physical and chemical adsorption.
	CO-11	Discuss factors influencing adsorption, its characteristics, differentiates types as physisorption and Chemisorption
	CO-12	Classification of Adsorption Isotherms, to derive isotherms.
	CO-13	Explanation of adsorption results in the light of Langmuir adsorption isotherm, Freundlich‟s adsorption Isotherm and BET theory
	CO-14	Apply adsorption process to real life problem.
	CO-15	Solve / discuss problems using theory.
	CO-16	Define, explain and compare meaning of accuracy and precision
	CO-17	Apply the methods of expressing the errors in analysis from results
	CO-18	.Explain / discuss different terms related to errors in quantitative analysis.
	CO-19	Apply statistical methods to express his / her analytical results in laboratory
	CO-20	Solve problems applying equations

	CO-21	Explain / define different terms in volumetric analysis such as units of concentration, indicator, equivalence point, end point, standard solutions, primary and secondary standards, complexing agent, precipitating agent, oxidizing agent, reducing agent, redox indicators, acid base indicators, metallochome indicators, etc.
	CO-22	Perform calculations involved in volumetric analysis
	CO-23	Explain why indicator show colour change and pH range of colour change.
	CO-24	To prepare standard solution and **b.** perform standardization of solutions.
	CO-25	To construct acid – base titration curves and performs choice of indicator for particular titration
	CO-26	. Explain / discuss acid-base titrations, complexometric titration / precipitation titration / redox titration.
	CO-27	Apply volumetric methods of analysis to real problem in analytical chemistry / industry
CH-302 Inorganic and Organic Chemistry	**CO-1**	Define terms related to molecular orbital theory (AO, MO, sigma bond, pi bond, bond order, magnetic property of molecules, etc).
	CO-2	. Explain and apply LCAO principle for the formation of MO‟s from AO‟s.
	CO-3	Explain formation of different types of MO‟s from AO‟s
	CO-4	Distinguish between atomic and molecular orbitals, bonding, anti-bonding and non-bonding molecular orbitals.
	CO-5	Draw and explain MO energy level diagrams for homo and hetero diatomic molecules. Explain bond order and magnetic property of molecule.
	CO-6	Apply MOT to explain bonding in diatomic molecules other than explained in syllabus
	CO-7	Define different terms related to the coordination chemistry (double salt, coordination compounds, coordinate bond, ligand, central metal ion, complex ion, coordination number, magnetic moment, crystal field stabilization energy, types of ligand, chelate effect, etc.) To correlate reagent and reactions

	CO-8	Explain Werner‟s theory of coordination compounds. Differentiate between primary and secondary valency. Correlate coordination number and structure of complex ion.
	CO-9	Apply IUPAC nomenclature to coordination compound
	CO-10	.Identify and draw the structures aromatic hydrocarbons from their names or from structure name can be assigned.
	CO-11	. Explain / discuss synthesis of aromatic hydrocarbons.
	CO-12	Give the mechanism of reactions involved.
	CO-13	Explain /Discuss important reactions of aromatic hydrocarbon
	CO-14	Identify and draw the structures alkyl / aryl halides from their names or from structure name can be assigned.
	CO-15	Explain / discuss synthesis of alkyl / aryl halides
	CO-16	Write / discuss the mechanism of Nucleophilic Substitution (SN1, SN2 and SNi) reactions
	CO-17	Explain /Discuss important reactions of alkyl / aryl halides
	CO-18	To correlate reagent and reactions.
	CO-19	Give synthesis of expected alkyl / aryl halides.
	CO-20	Identify and draw the structures alcohols / phenols from their names or from structure name can be assigned.
	CO-21	Able to differentiate between alcohols and phenols
	CO-22	Explain / discuss synthesis of alcohols / phenols
	CO-23	Write / discuss the mechanism of various reactions involved
	CO-24	Explain /Discuss important reactions of alcohols / phenols

	CO-25	To correlate reagent and reactions of alcohols / phenols
	CO-26	Give synthesis of expected alcohols / phenols.
CH-303 Practical Chemistry	**CO-1**	.Verify theoretical principles experimentally.
	CO-2	Interpret the experimental data on the basis of theoretical principles
	CO-3	Correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.
	CO-4	Understand systematic methods of identification of substance by chemical methods.
	CO-5	Write balanced equation for the chemical reactions performed in the laboratory
	CO-6	Perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC).
	CO-7	Set up the apparatus / prepare the solutions - properly for the designed experiments
	CO-8	Perform the quantitative chemical analysis of substances explain principles behind it
	CO-4	Systematic working skill in laboratory will be imparted in student.
CH-401 Physical and Analytical Chemistry	**CO-1**	Define the terms in phase equilibria such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc.
	CO-2	Explain meaning and Types of equilibrium such as true or static, metastable and unstable equilibrium.
	CO-3	Discuss meaning of phase, component and degree of freedom.
	CO-4	Derive of phase rule
	CO-5	Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system

	CO-6	Define various terms, laws, differentiate ideal and no-ideal solutions
	CO-7	Discuss / explain thermodynamic aspects of Ideal solutions-Gibbs free energy change, Volume change, Enthalpy change and entropy change of mixing of Ideal solution.
	CO-8	Differentiate between ideal and non-ideal solutions and can apply Raoult‟s law
	CO-9	Interpretation of i) vapour pressure–composition diagram ii) temperature-composition diagram.
	CO-10	Explain distillation of liquid solutions from temperature – composition diagram
CH-402 Inorganic and Organic Chemistry	**CO-1**	Isomerism in coordination complexes
	CO-2	Explain different types of isomerism in coordination complexes
	CO-3	Apply principles of VBT to explain bonding in coordination compound of different geometries.
	CO-4	Correlate no of unpaired electrons and orbitals used for bonding
	CO-5	Identify / explain / discuss inner and outer orbital complexes
	CO-6	Explain / discuss limitation of VBT.
	CO-7	Explain principle of CFT.
	CO-8	Apply crystal field theory to different type of complexes (Td, Oh, Sq. Pl complexes)
	CO-9	Calculate field stabilization energy and magnetic moment for various complexes.
	CO-10	To identify Td and Sq. Pl complexes on the basis of magnetic properties / unpaired electrons
CH-403 Practical Chemistry	**CO-1**	Verify theoretical principles experimentally
	CO-2	Interpret the experimental data on the basis of theoretical principles
	CO-3	Correlate the theory to the experiments. Understand / verify theoretical principles by experiment or explain practical output with the help of theory.
	CO-4	Understand systematic methods of identification of substance by chemical methods
	CO-5	Write balanced equation for all the chemical reactions performed in the laboratory.
	CO-1	Perform organic and inorganic synthesis and able to follow the progress of the chemical reaction.

	CO-2	Set up the apparatus properly for the designed experiments.
	CO-3	Perform the quantitative chemical analysis of substances and able to explain principles behind it.
TYBSc Physical Chemistry	**CO-1**	Understand the role of computers in simulating chemical processes analyzing data.
	CO-2	Quantify the ideas (not overshadowed by mathematics) about the behavior of molecules and systems in order to be able to cope with experimental testing.
	CO-3	Distinguish the usefulness of mathematics in Physical Chemistry and to be inspired by the charm of their application.
	CO-4	Thinks and reflects in the language of science avoiding the simple memorization of knowledge.
Inorganic Chemistry	**CO-1**	Student can draw molecular orbital diagram,
	CO-2	Learn about basic concept of coordination chemistry, BMO,ABMO orbitals splitting of d orbitals ,
	CO-3	Know about crystalline structure,
	CO-4	Know about homogeneous and heterogeneous catalysis
Organic Chemistry	**CO-1**	Describe the synthesis of chemical reactions of poly nuclear and hetreo nuclear aromatic Hydrocarbons.
	CO-2	Meaning of active methylene group
	CO-3	Reactivity of methylene group,
	CO-4	Synthetic applications ethyl acetoacetate and malonic ester
	CO-5	To predict product with panning or supply the reagent/s for these reactions
	CO-1	From the IR spectrum, they will be able to find out IR frequencies of different functional groups. And thus, they will be able to find functional groups present in the compound.
	CO-2	Students will understand the principle of NMR spectroscopy and will understand various terms used in NMR spectroscopy. They will learn measurement of chemical shift and coupling constants.
Analytical Chemistry	**CO-1**	Upon completion of a degree
	CO-2	Acquire the Principles of Qualitative and Quantitative analysis w.r.t., Gravimetric , Thermal and Electro gravimetric analysis in detail
	CO-3	Principles of Quantitative Analysis (Spectrophotometry - Colorimeter, spectrophotometer, AAS, FES and Polarography) with instrumentation, role of each part, types of instruments and its applications
	CO-4	Principles of separation Techniques like solvent extraction

Industrial Chemistry	**CO-1**	Understanding of industrial processes and various chemical manufacturing processes of food , cement ,starch
	CO-2	Glass , polymer, sugar and fermentation, soap, detergents and cosmetics, dyes and paints, pharmaceutical industries.
	CO-3	Composition of petroleum, resources, processing of petroleum Fuels and eco-friendly fuels
Environ-mental Chemistry	**CO-4**	Importance of chemical industry, Various insecticides, Various insecticides.
	CO-1	Principles of green chemistry, Advantages of green chemistry, Methods of water purification, Waste water treatment process, Techniques used to monitor hazardous materials present in environment.
MSc II Organic Reaction Mechanism and Biogenesis(CHO-350)	**CO-1**	Understand the Mechanism of the reaction and application of the reaction.
	CO-2	To determine Kinetic and Non- Kinetic methods
	CO-3	To determine Free Radicals in Organic Synthesis.
	CO-4	To determine Synthesis of Biogenesis of Terpenoids.
	CO-5	To determine Hammet Equation , Substituent constants, Use of Hammet plots
Structure Determination	**CO-1**	To determine first and second order splitting.
of Organic Compounds by Spectroscopic Compounds. (CHO-351)	**CO-2**	To determine chiral NMR solvents in structure determination.
	CO-3	To determine fundamentals and applications in structure elucidation
	CO-4	2D NMR spectroscopy in structure elucidation
	CO-5	. To determine complex multiplicity patterns and coupling constants in asymmetric compounds
Organic stereo Chemistry (CHO-352)	**CO-1**	Logical reasoning as well as thinking should be enhanced in students
	CO-2	Students should be able to find out reaction products of organic reactions with proper stereo chemistry.
	CO-3	Students should be able to understand the proper stereochemistry of cyclic compounds.
CBOP-3, Designing Organic Synthesis and Heterocyclic chemistry reaction(CHO-353(B)	**CO-1**	To determine retrosynthetic analysis.
	CO-2	To determine interconversion of two groups
	CO-3	To determine C-C disconnection in heteroatom and heterocyclic compounds

CCTP-10, Chemistry of Natural Products reaction(CH O-450)	**CO-1**	Understanding and planning of total synthesis while maintaining the stereochemistry.
CBOP-4 , Concepts and Applications of Medicinal Chemistry(CH O-452 -A)	**CO-1**	To determine proteins as biological catalysts.
	CO-2	To determine chemistry of diseases and drug development.
	CO-3	To determine Pharmacokinetics and Pharmacodynamics of drug.
	CO-4	Ternary Mixture Separation.
	CO-5	Carbohydrates synthesis and isolation of Natural Products.

NAME OF THE SUBJECT	**M.SC I 2020 NEP PATTERN - ORGANIC CHEMISTRY**
CHE- 501, Physical Chemistry I	CO-1. Understand the role of computers in simulating chemical processes and analyzing data. CO-2. Quantify the ideas (not overshadowed by mathematics) about the behavior of molecules and systems in order to be able to cope with experimental testing. CO-3. Distinguish the usefulness of mathematics in Physical Chemistry and to be inspired by the charm of their application. CO-4. Thinks and reflects in the language of science avoiding the simple memorization of knowledge
CHE- 504, Physical Chemistry Practical I	CO1: Students will grasp the concept of reaction rate and its significance in Chemical Kinetics. CO2: Students will learn how to use experimental data to deduce rate laws and rate constants. CO3: Students will be familiar with the fundamental principles of colorimetry and spectrophotometry including Beer's law, Lambert- Beer's law and the relationship between absorbance and concentration. CO4: Students will be able to operate the instruments like spectrophotometer and colorimeter. CO5: Students will be able to determine the densities of the solutions and can calculate molar volume CO-1. To determine types of molecule on the basis of moment of inertia and rotational spectra. CO- 2. To determine the vibrations of polyatomic molecule. CO- 3. To determine quantum and classical theory of Raman effect, pure rotational Raman spectra

	CO- 4. To determine electronic spectra of diatomic molecules CO- 5. To determine Principle, Instrumentation and Applications of Mossbauer Spectroscopy.
CHEOD-502, Inorganic Chemistry-I CHE-505, Inorganic Chemistry Practical-I	CO- 1. Student should visualize/ imagine molecules in 3 dimension. To understand the concept of symmetry and able to pass various symmetry elements through the molecule. Understand the concept and point group and apply it to molecules. To understand product of symmetry operations. CO-2 . To apply the concept of point group for determining optical activity and dipole moment Student should understand the importance of Orthogonality Theorem. They should able to learn the rules for constructing character table. CO-3 Apply projection operator to find out the normalized wave function for atomic orbital. Student should correlate the application of symmetry to spectroscopy. CO-4.Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications. 2. To learn the advance chemistry of boranes, fullerene, zeolites, polymers etc. CO-5. Organometallic chemistry of some important elements from the main groups and their applications **CHE-505, Inorganic Chemistry Practical-I** CO-1: Prepare solution of required conc. and the handle laboratory equipment properly. CO-2: Perform experiment accurately and able to perform calculation. CO-3: Explain experiment and principal of experiment in detail. CO-4: Perform calculations and discuss results and write conclusions of the experiment. CO-5: Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure. CO-6: Solve problem/ numerical depending on given experimental data / information CO-1: Prepare solution of required conc. and the handle laboratory equipment properly. CO-2: Perform experiment accurately and able to perform calculation. CO-3: Explain experiment and principal of experiment in detail. CO-4: Perform calculations and discuss results and write conclusions of the experiment. CO-5: Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure. CO-6: Solve problem/ numerical depending on given experimental data / information
CHE-503, Organic Chemistry-ISemester – I	**CO-1 .** They will understand the **c**riteria for aromaticity in nonbenzenoid molecules and other advanced polycyclic aromatics Understand the chemistry of monocyclic heterocycles, nomenclature and reactions .Learn the concept stereochemistry and its importance; their rules and the concept of chirality **CO-2** Understand the role of various reaction intermediates like carbocation, carbanion, carbenes, radicals, and nitrenes in organic reactions; concept of NGP Able to describe mechanism of different rearrangement reactions. Appreciates the various steps involved in the molecular rearrangements. Understand the chemistry of Ylides **CO-3 .** Use synthetic reagent of oxidation and reduction for solving the problems

	To understand some fundamental aspects of organic chemistry, to learn the concept aromaticity, to understand the various types of aromaticity To study heterocyclic compound containing one and two hetero atoms with their structure, synthesis and reactions. **.** To know stereochemistry of organic compounds; able to do interconversion of Fischer to Newmann, Newmann to Sawhorse and vice versa, Able to assign R and S to given molecules; understand stereoselective and stereospecific reactions; acquire knowledge on topicity. **CO-4 .** To study structure, formation, stability and related name reaction of intermediates like Carbocation, Carbanion, Free Radical, Carbenes and nitrenes; Recognize neighboring group participation To study rearrangement reaction with specific mechanism and migratory aptitude of different groups. To study Ylides and their reaction.
CHE-506, Organic Chemistry Practical I	CO1: Understand the theoretical aspects behind separation, purification and synthesis of organic compounds. CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds. CO3: Design experimental set up for performing the organic reactions. CO4: Monitor the organic reactions. CO5: Describe the mechanistic aspects of organic reactions. CO6: Develop problem solving abil
CHEOD-507(D) Organic Reactions and Reagents	Course outcomes: At the end of the course, students will be able to CO1: Understand the concepts of named organic reactions and reagents CO2: Identify the type of named organic reaction and uses of reagents. CO3: Predict the reaction conditions of organic reaction. CO4: Write the reaction mechanism. CO5: Design appropriate synthetic route. CO6: Develop problem solving ability of the students.
CHE-508, Research methodology	Course outcomes: CO1: Develop a comprehensive understanding of different research methodologies and their applications in mathematics. CO2: Cultivate critical thinking and analytical skills necessary for identifying research problems and formulating research questions. CO3: Provide practical experience in designing experiments, collecting and analyzing data, and interpreting research results. CO4: Foster effective communication skills for presenting research findings orally and in written form. CO5: Promote ethical research practices and awareness of responsible conduct in mathematical research CO5; Develop problem solving abilit
	Course Outcomes CO1: Remember basic concepts of molecular spectroscopy, selection rules, intensity of spectral lines and width of spectral transition. CO2: Understand principles and applications of rotational, vibrational, raman, electronic and moss bauer spectroscopy. CO3: Apply various spectroscopic techniques for gaining insights into molecular

	structure CO4: Analyse vibrating diatomic molecule, simple harmonic and anharmonic oscillator, Scattering of light and Raman Spectrum CO5: Evaluate bond length, vibrational frequency, force constant and dissociation energy using spectral data. CO6: Create awareness about rotational fine structure, vibrational coarse structure, Quadrupole effects
CHEOD- 551, Molecular Spectroscopy	Students will be able to understand - 1. MOT and will be able to extend this in predicting reaction mechanism and stereochemistry of electrocyclic reactions. 2. The concepts in free radical reactions, mechanism and the stereo chemical outcomes. 3. The basic principle of spectroscopic methods and their applications in structure elucidation of organic compounds using given spectroscopic data or spectra.
CHE-552: Inorganic Chemistry-II	Course Outcomes: At the end of course student should able to – CO-1: Define R. S. term, configuration, microstate, paramagnetic, diamagnetic ferromagnetic, antiferromagnetic, Curie and Neel temperature. CO-2: Identify complex ions showing same R.S. terms, degeneracy of ground state terms ofmetal ions, and spin multiplicities of different configurations. CO-3: Interpret electronic spectra forspin allowed Oh and Td complexes using Orgel diagram,Magnetic properties of A, E and T ground terms in complexes and selection rules. CO-4: Calculate frequencies of absorption spectrum, 10Dq, Racah and nepholauxetic parameter for a complex, and magnetic moments of complexes CO-5: Distinguish between hemoglobin and myoglobin, transferrin and ferritin, photosystem-I and photosystem-II. CO-6: Decide role of metals in biological system, medicine, blood coagulation, oxygen storage and transport, photosynthesis and uptake and transport of iron
CHE-552: Inorganic Chemistry-II	CO1: Understand the concepts of pericyclic and photochemical reactions, and molecular rearrangements CO2: Learn concepts of Organic Spectroscopy. CO3: Identify the type of pericyclic and photochemical reactions CO4: Solve the problems based on pericyclic and photochemical reactions and molecular rearrangements
CHE-553, Organic Chemistry-II (4 credits, 60 L) (Pericyclic	CO1: Students will grasp the fundamental principles of Conductometry, Polarography, Potentiometry and pH metry. CO2: Students will familiar with the operation of Conductometer, Polarimeter, Potentiometer and pH meter. CO3: Students will understand the concepts of conductance, resistance and learn how to calculate and interpret these values CO-1: Define coordination complex, cell constant, resistance, specific conductance, equilibrium constant, absorbance, Beer's law, solubility product, chromatography, etc. CO-2: Discuss photochemistry of potassium trioxalatoferrate complex, kinetics of formation of Cr(III)-EDTA, Determination of Cu(II)and Fe (II) by solvent extraction

Reactions, Molecular Rearrangements, Photochemistry and Organic Spectroscopy)	technique. CO-3: Outline the flow-chart for synthesis of [Mn(acac)3], Chloropentaamminecobalt(III) chloride, Nitro pentaamminecobalt(III) chloride, Bis[TrisCu(I)thiourea complexes. CO-4: Estimate purity of the [Mn(acac)3], Chloropentaamminecobalt(III) chloride, Nitro pentaamminecobalt(III) chloride, Bis[TrisCu(I)thiourea complexes CO1: Understand the theoretical concepts behind organic synthesis. CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds. CO3: Design experimental set up for performing the organic reactions. CO4: Monitor the organic reactions and analyse the products using spectral results. CO5: Describe the mechanistic aspects of organic reactions
CHE- 554, Physical Chemistry Practical II	CO1: Define various terms in organometallic chemistry and inorganic reaction mechanism etc. CO2: Explain/Discuss various reaction mechanisms such as ligand insertion, inner and outersphere mechanism, ligand substitution reaction. CO3: Discuss 1. Structure and bonding in carbonyl and organometallic complexes, 2: Trans effect, 3. Ligand field effects, catalytic cycles, 4. Inert and labile complexes, 5. Synthesismethods of organometallic compounds, etc.
CHE-555: Inorganic Chemistry Practical-II	CO1 Students in this course will be required to do On the Job Training (OJT)/Internship in relevant industries/government sectors/institutes, etc. to gain practical training. As a prerequisite for OJT, the department may conduct necessary lectures/workshops/seminars. The course will be run as per the guidelines of the Institute /the University and Government of Maharashtra. Most of our graduates are expected to seek employment in industries, pursue teaching careers, or establish small enterprises after obtaining their M.Sc. degree.
CHE-556, Organic Chemistry Practical II	
CHE-557(A), Organometallic Compounds and Inorganic Reaction Mechanism	
CHE-558, On Job Training/ Internship	

Zoology		
Course Title	**Code**	**Course Title**
F.Y.B.Sc. and S.Y.B.Sc. Paper I	**CO-1**	This course will provide students with an opportunity to gain information regarding animal classification and systematic, animal structure and function relationships, evolution between and within major animal groups, animal reproduction and development, animal diversity and animal ecology.

	CO-2	The General Zoology course is designed to introduce students to the study of zoology at the organismal and organ function levels
	CO-3	The general zoology course provides the student with an introduction to the recent advances in zoology in the areas of systematic, evolution, reproduction, development
	CO-4	At the end of the semester, the students are expected to have
	CO-5	Understand the interrelationship of all life forms through the knowledge of common life processes
F.Y.B.Sc. and S.Y.B.Sc. Paper II	**CO-1**	Applied zoology, cell biology and Genetics courses provide offer a broad, relevant and contemporary curriculum.
	CO-2	The lecture section of the course will review the general principles of modern and applied zoological theory.
	CO-3	The courses encourage in students an enthusiasm for biological sciences in general for whole animal science and conservation of the natural environment in particular.
	CO-4	It develops an understanding of the ethical, economic, legal and political context of keeping captive animals, animal behavior, ecology and conservation.
	CO-5	It produces graduates with the ability to apply concepts from Zoology and communicate ideas effectively in a range of contexts and communication modes.
F.Y.B.Sc. and S.Y.B.Sc. Paper III	**CO-1**	The practical courses provide opportunities for practical work practical skills in laboratory-based and field zoology and experiential learning in aspects of Applied Zoology.
	CO-2	The specific learning goals for General Zoology are to provide students with a working knowledge of fundamental principles in zoology that will provide a foundation for their later advanced course work in more specific biological subjects.
	CO-3	As General Zoology is a basic course, students will become familiar with animal classification schemes and associated taxonomic group diagnostic characteristics as well as developing an understanding of and ability to apply basic zoological principles.
	CO-4	The laboratory and lecture sections of the course are highly integrated and directed toward teaching students the principles of animal evolution, classification, form and function.
	CO-5	It promotes students‟ ability to critically think about, assess and evaluate data gathered both in the field and through scientific literature.
BOTANY		
Course Title	**Code**	**Course Outcomes**
FIRST YEAR	**CO-1**	Students understand the diversity of lower plant and their distinct features.

Plant life and utilization I (BO111)	**CO-2**	Understand the algal diversity and its industrial application
	CO-3	Distinct classes of Lichen and their utilization
	CO-4	Understand the Fungal diversity and their application in various industries.
	CO-5	Cultivate the mushroom and their values.
Plant morphology and Anatomy (BO112)	**CO-1**	Understand the importance of plant morphology in allied branches of botany
	CO-2	Students get an idea about various floral whorl and its importance in plant reproduction
	CO-3	Students study the role of anatomy in other allied branches of botany
	CO-4	Student know about the different tissues present in plant their structure and role.
	CO-5	Understand the differences in internal organization of two distinct plant group and plant parts
Plant life and utilization II (BO121)	**CO-1**	Students understand the differences in higher plant structure
	CO-2	Knows the different characters in Pteridophytes and their uses
	CO-3	Know the distinct features of gymnosperm, structure of Cycas and their economic potential
	CO-4	Understand the morphological differences in dicot and monocot and their classification
	CO-5	Knows the value of angiosperm in various industries such as food, fodder and fibre
Principles of Plant Science (BO122)	**CO-1**	Understanding the scope and importance of plant physiology.
	CO-2	Demonstrate processes imbibition, Osmosis, Diffusion and Plasmolysis
	CO-3	Describe Plant growth regulators and their types.
	CO-4	Discuss the structure of plant cell and Plasma membrane and cell cycle in plants
	CO-5	Explain the scope and importance of molecular biology.
	CO-6	Describe the structure of DNA, Packing of DNA and types of DNA, RNA.
	CO-6	Explain the DNA replication process, enzymes involved in that process.
SEM I **Course Paper I: Taxonomy of Angiosperm and Plant Community**	**CO-1**	Students will learn the application of morphology in plant identification, classification and nomenclature
	CO-2	Students learn Plant collection, preservation techniques and can identify plant in field.
	CO-3	Students get aware about various recent computerized tools used in plant research

(BO – 211)	**CO-4**	Students will know how the vegetation pattern change in different ecosystem
	CO-5	Students will learn the techniques of vegetation studies and its application
Course Paper II Plant Physiology	**CO-1**	Define the terminologies: Plant water relations, Growth, Transpiration, Ascent of Sap, Plant
	CO-2	Growth regulators and Nitrogen metabolism.
	CO-3	Explain processes of mineral nutrition, absorption of water, ascent of sap, mechanisms of water
	CO-4	Describe Plant growth regulators and their types and Discuss nitrogen metabolism in plants
	CO-5	Demonstrate processes imbibition, Osmosis, Diffusion and Plasmolysis, measure growth by arc
SEM II **Course Paper I: Plant Anatomy, Embryology and Palynology (BO 213)**	**CO-1**	Define terms related to plant Anatomy, Embryology.
	CO-2	Describe various tissue systems in plants like epidermal, mechanical and vascular.
	CO-3	Interpret the Principles involved in distribution of mechanical tissues.
	CO-4	Explain the process of normal and abnormal secondary growth in plants.
	CO-5	Differentiate between normal and abnormal secondary growth
Course Paper II: Plant Biotechnology (BO 213)	**CO-1**	Define the terminologies related to plant biotechnology.
	CO-2	Describe the fermentation process.
	CO-3	Explain enzyme technology and their industrial scale production.
	CO-4	Interpret the production of Single cell proteins.
	CO-5	Illustrate the concept of phytoremediation.
PHYSICS		
Course Tiitle	**Code**	**Course Outcome**
FIRST YEAR TERM I- Mechanics	**CO-1**	Demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems.
	CO-2	Use the free body diagrams to analyze the forces on the object.
	CO-3	Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them.
	CO-4	Understand the concepts of elasticity and be able to perform calculations using them.

	CO-5	Understand the concepts of surface tension and viscosity and be able to perform calculations using them.
Physics Principlesand applications	**CO-1**	To demonstrate an understanding of electromagnetic waves and its spectrum.
	CO-2	
	CO-3	To understand the general structure of atom, spectrum of hydrogen atom.
	CO-4	To understand the atomic excitation and LASER principles.
Heat and Thermodyna mics	**CO-1**	Describe the properties of and relationships between the thermodynamic properties of a pure substance.
	CO-2	Describe the ideal gas equation and its limitations.
	CO-3	Describe the real gas equation.
	CO-4	Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.
	CO-5	Analyze the heat engines and calculate thermal efficiency.
Electro magne tism	**CO-1**	Demonstrate an understanding of the electric force, field and potential, and related concepts, for stationary charges.
	CO-2	Calculate electrostatic field and potential of simple charge distributions using Coulomb's law and Gauss's law.
	CO-3	Demonstrate an understanding of the dielectric and effect on dielectric due to electric field.
	CO-4	Demonstrate an understanding of the magnetic field for steady currents using Biot-Savart and Ampere's laws.
	CO-5	Demonstrate an understanding of magnetization of materials.
F Y BSc Physics Practical	**CO-1**	Acquire technical and manipulative skills in using laboratory equipment, tools, and materials.
	CO-2	Demonstrate an ability to collect data through observation and/or experimentation and interpreting data.
	CO-3	Demonstrate an understanding of laboratory procedures including safety, and scientific methods.
	CO-4	Demonstrate a deeper understanding of abstract concepts and theories gained by experiencing and visualizing them as authentic phenomena.
SECOND YEAR	**CO-1**	Understand the complex algebra useful in physics courses
	CO-2	Understand the concept of partial differentiation.

Mathematical Methods in Physics	**CO-3**	Understand the role of partial differential equations in physics
	CO-4	Understand vector algebra useful in mathematics and physics
	CO-5	Understand the singular points of differential equation.
Electronics	**CO-1**	Understand the relations in electricity
	CO-2	Understand the properties and working of transistors.
	CO-3	Understand the functions of operational amplifiers.
	CO-4	Design circuits using transistors and operational amplifiers.
	CO-5	Understand the relations in electricity
Oscillation, waves and sound	**CO-1**	Understand the physics and mathematics of oscillations.
	CO-2	Solve the equations of motion for simple harmonic, damped, and forced oscillators.
	CO-3	Formulate these equations and understand their physical content in a variety of applications.
	CO-4	Describe oscillatory motion with graphs and equations, and use these descriptions to solve problems of oscillatory motion.
	CO-5	Explain oscillation in terms of energy exchange, giving various examples.
	CO-6	Solve problems relating to Undamped, damped and force oscillators and superposition of oscillations
Optics	**CO-1**	Acquire the basic concepts of wave optics
	CO-2	Describe how light can constructively and destructively interfere
	CO-3	explain why a light beam spreads out after passing through an aperture
	CO-4	Summarize the polarization characteristics of electromagnetic waves
	CO-5	Appreciate the operation of many modern optical devices that utilize wave optics
S Y B Sc. PhysicsPractical	**CO-1**	After completing this practical course students will be able to
	CO-2	Use various instruments and equipment.
	CO-3	Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
	CO-4	Investigate the theoretical background to an experiment.

	CO-5	Set up experimental equipment to implement an experimental approach.
Department of Mathematics		
Department of Mathematics	**CO-1**	The mathematical maturity of students in their current and future courses shall develop.
	CO-2	The student develops theoretical, applied and computational skills.
	CO-3	The student gains confidence in proving theorems and solving problems.
		To study Plant Meristem, characters and types based on origin, position and plane of division, functions.
		To understand structure and function of of epidermal, vascular tissue system
		To understand structure and function of simple and compound plant tissue
Department of Political Science		
Course Title	**Code**	**Course Outcomes**
FYBA Introduction to Indian Constitution	**CO-1**	Students realized the significance of constitution of India from all walks of life and helped them to understand the basic concepts of Indian constitution.
	CO-2	Students identified the importance of fundamental rights, Directive Principles of State Policy as well as fundamental duties.
	CO-3	Students understood the functioning of Union and State Governments in Indian federal system.
	CO-4s	Students learned procedure and effects of constitutional amendments, composition and activities of election commission.
SYBA Introduction to Political Science	**CO-1**	Students enabled to understand the nature and scope of political science.
	CO-2	Students enabled to understand the significance of approaches to the study of political science.
	CO-3	Students enabled to acquaint with the theories, approaches, concepts and values of political science.
TYBA Local Self Government in Maharashtra	**CO-1**	Students understood the evolution of Local Self Government in Maharashtra.
	CO-2	Students understood the significance of 73^{rd} and 74^{th} Constitutional Amendments.
	CO-3	Students understood the functioning of Local Self Government.

	CO-4	Students learned composition, power and functions of local bodies.
Department of History		
Course Title	**Code**	**Course Outcomes**
History of the Marathas: (1630-1707)	**CO-1**	Student will develop the ability to analyse sources for Maratha History.
	CO-2	Student will learn significance of regional history and political foundation of the region.
	CO-3	It will enhance their perception of 17th century Maharashtra and India in context of Maratha history.
Medieval India - Sultanate Period	**CO-1**	Provides examples of sources used to study various periods in history.
	CO-2	Relates key historical developments during medieval period occurring in one place with another.
	CO-3	Analyses socio - political and economic changes during medieval period 4. Estimate the foreign invasion and the achievement of rulers.
Glimpses of the Modern World - Part I	**CO-1**	It will enable students to develop the overall understanding of the Modern World.
	CO-2	The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
	CO-3	It will enhance their perception of the history of the Modern World.
	CO-4	It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.
Skill Enhancement Courses (SEC) Art and Architecture in Early India.	**CO-1**	Students will get an overall understanding of the emergence and development of the art and architecture in Early India.
	CO-2	They will understand the emergence of the Pottery, Terracotta figures, Ornaments, Town Planning, preparation of seals and coins.
	CO-3	They will have an understanding of the art and architecture in early India.
TYBA	**CO-1**	It will enable students to develop an overall understanding of Modern India.
Indian National Movement (1885-1947)	**CO-2**	It will increase the spirit of healthy Nationalism, Democratic Values and Secularism among the Students.
	CO-3	Students will understand various aspects of the Indian

	CO-4	Independence Movement and the creation of Modern India.
Introduction to Historiography	**CO-1**	Students will be introduced to the information and importance of Historiography.
	CO-2	Students will be introduced to the different Methods and Tools of data collection.
	CO-3	3. Students can study the interdisciplinary approach of History
Maharashtra in the 19th Century	**CO-1**	Student will develop the ability to analyse sources for 19th century Maharashtra History.
	CO-2	Student will learn significance of Regional History and Socio- religious reformism foundation of the region.
	CO-3	It will enhance their perception of 19th Century Maharashtra.
	CO-4S	Appreciate the skills of leadership and the Socio-religious System of the Maharashtra.
Department of English		
Course Title	**Code**	**Course Outcomes**
11001, 12001 Compulsory English FYBA	**CO-1**	Recall parts of speech.
	CO-2	Identify various types of vocabulary. CO3: Recognize the themes of each lesson. CO4: Recite lines from poems.
	CO-3	Summarize and analyze a poem.
	CO-4	Describe various characters of a short story.
	CO-5	Apply the knowledge of language in day-to-day conversation
	CO-6	Describe various characters of a short story.
	CO-7	Apply the knowledge of language in day-to-day conversation
23001, 24001 Compulsory English SYBA	**CO-1**	Define various types of sentences and write different types of paragraphs
	CO-2	Describe and give examples of different types of characters, situations, and values of life.
	CO-3	Summarize prose and poetic pieces for better comprehension.
	CO-4	Demonstrate competence in usage of language in day to day life.
	CO-5	Classify and transform different types of sentences and apply vocabulary in communication.

	CO-6	Relate to real life situations.
35001, 36001 Compulsory English TYBA	**CO-1**	Define communicative use of language in Indian Context.
	CO-2	Use different types of sentences, and change one type into the other.CO3: Think about the cross cutting issues around us.
	CO-3	Define verbal and non-verbal communication.
	CO-4	Understand the importance of life-skills and soft skills.
	CO-5	Give examples of selected diction of specific writer or poet.CO7: Use Literary language with reference to Indian English
	CO-6	Compose and draft letters and essays and reports.
	CO-7	Define communicative use of language in Indian Context.
	CO-8	Use different types of sentences, and change one type into the other.CO3: Think about the cross cutting issues around us.

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Department of Chemistry
CBCS Pattern 2019 (SPPU)
PO's, CO's and PSO's

Under Graduate (FYBSc, SYBSc and TYBSc)

PO's

PO1	After completion of three year graduate, Student should Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life
PO2	Acquired the knowledge with facts and figures related to various subjects in pure sciences such as Physics, Chemistry, Botany, Zoology, Mathematics, etc.
PO3	Acquired the skills in handling and applications of available scientific instruments, planning and performing in laboratory experiments in present subjects in their level
PO4	Analyzed the given scientific data critically and systematically and the ability to draw the objective conclusions
PO5	Thinking and developments in any science subject helps in the development of other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for the sustainable developments
PO6	Developed scientific outlook not only with respect to science subjects but also in all aspects related to life and community by participating in various social and cultural activities voluntarily
PO7	Developed various communication skills such as reading, listening, speaking, etc., which we will help in expressing ideas and views clearly and effectively
PO8	Realized that pursuit of knowledge is a lifelong activity and in combination with untiring efforts and positive attitude and other necessary qualities leads towards a successful life

PSO's

PSO1	Upon completion of the Graduate Chemistry sequence, chemistry majors are able to recognize and apply the principles of atomic and molecular structure to predict chemical properties and chemical reactivity
PSO2	Upon completion of a degree, chemistry majors are able to employ critical thinking and scientific inquiry in the performance, design, interpretation and documentation of laboratory experiments, at a level suitable to succeed at an entry-level position in chemical industry or a chemistry graduate program.
PSO3	Upon completion of a chemistry degree, chemistry majors are able to interpret and analyze quantitative data.
PSO4	Upon completion of a BS in Chemistry degree, students are able to understand theoretical concepts of instruments that are commonly used in most chemistry fields as well as interpret and use data generated in instrumental chemical analyses.
PSO5	Understand the basics in Atomic Structure, Errors in analysis, Acids, Bases, Its strength, Electrophilic, Nucleophilic Periodicity, Qualitative, Quantitative analysis, Chromatographic Techniques, Kinetic reactions, Conductance, Phase rules, Nuclear rections, Quantum, MOT, Sidgwick, LFT, CFT, Coordination Chemistry, Industries like Agro, Cement, Glass, Food, Sugar, Soap, Dye etc.
PSO6	The ability to apply such knowledge and understanding to the solution of qualitative and quantitative problems
PSO7	Basic knowledge of spectra of molecular, atomic, UV, IR and NMR
PSO8	Approach to Green Chemistry and protection of environment and west management
PSO9	Progression to HE

CO's

FY BSc - text for each subject(NEP)

Name of the Subject	Course Outcome
CHE-101-T: Fundamentals of Chemistry-I	CO-I After the completion of this course, student will be able toCO1: recall the fundamental concepts of the mole concept, atomic structure, organic chemistry, catalysis, and surface chemistry. CO2: explain the principles of chemical stoichiometry, Hund's rule, Aufbau principle and catalysis. CO3: utilize the knowledge of the mole concept, atomic structure, factors affecting the reactivity of organic compounds, and surface chemistry. CO4: apply the principles of the mole concept, atomic structure, organic reactivity, catalysis, and surface chemistry to solve the problems. CO5: evaluate the solutions based on their concentration, and organic structures based on their reactivity and surface chemistry. CO6: propose solutions to problems related to organic chemistry reactions, catalysis mechanisms, and atomic structure concepts, and apply them to real-world scenarios.
2. CHE-102-P: Chemistry Practical-I	Students have following skills : After the completion of this course, student will be able to CO-1: acquire basic knowledge of experiments of including adsorption, organic qualitative analysis, and inorganic preparations and estimations. CO-2: utilize theoretical concepts to perform experiments, interpret data, and formulate conclusions. CO-3: foster critical thinking abilities to assess and enhance the reliability and accuracy of experimental findings. CO-4: report scientific findings of laboratory experiments. CO-5: evaluate experimental outcomes to draw insightful conclusions. CO-6: develop problem-solving skills
SEC-101-CHE: Chemistry Laboratory Skills – I	After the completion of this course, student will be able to CO1: know the Lab Safety CO2: demonstrate laboratory apparatus, equipments, reagents and laboratory

	techniques. CO3: prepare reagents and solutions of various concentrations. CO4: explain standard safety guidelines, apparatus, reagents, solvents, solutions and laboratory techniques.
CHE-151-T: Fundamentals of Chemistry-II	CO5: prepare solutions of various concentrations CO6: design safe methods for laboratory techniques able to do calculations essential for analysis. **CHE-151-T: Fundamentals of Chemistry-II** After the completion of this course, student will be able to CO1: recall and explain the fundamental principles and concepts from Photochemistry, Chemical Kinetics, Periodicity, Stereochemistry, and Chemical Bonding. CO2: identify experimental key concepts involved in Photochemistry, Chemical Kinetics, Periodicity, Stereochemistry, and Chemical Bonding. CO3: draw conclusions about reaction mechanisms, kinetics, periodic trends, stereochemical relationships, and bonding properties. CO4: apply the principles of Photochemistry, Chemical Kinetics, Periodicity, Stereochemistry, and Chemical Bonding to solve complex problems and scenarios. CO5: evaluate the significance of photochemical reactions, kinetic processes, periodicity, bonding theories like VBT and MOT and stereochemical structures. CO6: propose solutions, and contribute to the advancement of scientific knowledge applications.
CHE-152-P: Chemistry Practical-II	After the completion of this course, student will be able to CO-1: learn vital lab techniques: colorimetry, kinetics, organic purification, investigative inorganic experiments, and Avogadro applications. CO-2: apply theoretical principles to design and conduct experiments, analyze data, and draw conclusions. CO-3: cultivate critical thinking skills to ensure the reliability and accuracy of experimental results. CO-4: communicate scientific findings through laboratory reports, utilizing proper scientific formatting, terminology, and data analysis techniques. CO-5: evaluate experimental outcomes to draw insightful conclusions. CO-6: develop problem-solving skills
SEC-151 CHE (B): Chemistry Laboratory Skills – II (Practical)	After the completion of this course, student will be able to CO-1: Learn the Chemistry laboratory techniques. CO-2: Know the safe manipulation of various glassware, apparatus and equipments. CO-3: explain safe and proper management of chemicals and laboratory

	apparatus/equipment. CO-4: formulate operational guidelines for chemical and instruments methods. CO-5: Evaluate the glassware, apparatus, and equipment's on the basis of need of the experiments. CO-6: Create a report/guideline on Chemistry Laboratory Techniques.

SY BSc - text for each subject

Name of the Subject	Course Outcome
CH-301 Physical and Analytical Chemistry	CO-1. Understand the students concept of kinetics, terms used, rate laws, molecularity, order,rate of reaction, order of reaction, factors affecting rate of reaction. CO-2 . Explain derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions. Determination of order of reaction by integrated rate equation method, graphical method, half-life method and differential method. CO-3 Understand the term energy of activation with the help of energy diagram. Derivation of Arrhenius equation and evaluation of energy of activation graphically. CO-4 . Discuss factors influencing adsorption, its characteristics, differentiates types as physisorption and Chemisorption Classification of Adsorption Isotherms, to derive isotherms. CO-5 Apply adsorption process to real life problem. discuss problems using theory. CO-6 Students can understand and explain and compare meaning of accuracy and precision.,apply the methods of expressing the errors in analysis from results., different terms related to errors in quantitative analysis. CO-7 Students can apply statistical methods to express his / her analytical results in laboratory. CO-8 Solve problems applying equations CO-9 Apply volumetric methods of analysis to real problem in analytical chemistry / industry

CH-302 Inorganic and Organic Chemistry	CO-1 Students can understand the terms related to molecular orbital theory (AO, MO, sigma bond, pi bond, bond order, magnetic property of molecules, etc). LCAO principle for the formation of MO's from AO's.formation of different types of MO's from AO's. . Co-2 Students can draw and explain MO energy level diagrams for homo and hetero diatomic molecules. Explain bond order and magnetic property of molecule formation and stability of molecule on the basis of bond order. MOT to explain bonding in diatomic molecules other than explained in syllabus. CO-3 Students can understand different terms related to the coordination chemistry (double salt, coordination compounds, coordinate bond, ligand, central metal ion, complex ion, coordination number, magnetic moment, crystal field stabilization energy, types of ligand, chelate effect, etc.) .CO-4 Student can Identify and draw the structures aromatic hydrocarbons from their names or from structure name can be assigned, Explain / discuss synthesis of aromatic hydrocarbons. CO-4 Students can explain important reactions of aromatic hydrocarbon. To correlate reagent and reactions Identify and draw the structures alkyl / aryl halides from their names or from structure name can be assigned. . CO-5 Identify and draw the structures alcohols / phenols from their names or from structure name can be assigned. Able to differentiate between alcohols and phenols.
CH-303 Practical Chemistry	CO-1 Student can verify theoretical principles experimentally. Interpret the experimental data on the basis of theoretical principles. CO-2 . Correlate theory to experiments. Understand the oretical principles by experiment observations; explain practical output / data with the help of theory. CO-3 Understand systematic methods of identification of substance by chemical methods. CO-4 Write balanced equation for the chemical reactions performed in the laboratory. CO-5 Perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC). CO-6 Set up the apparatus / prepare the solutions - properly for the designed experiments. CO-7 Perform the quantitative chemical analysis of substances explain

	principles behind it. CO-8 Systematic working skill in laboratory will be imparted in student.
CH-401 Physical and Analytical Chemistry	Co-1 Student can explain the terms in phase equilibria such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc. meaning and types of equilibrium such as true or static, metastable and unstable equilibrium. Discuss meaning of phase, component and degree of freedom. Derive of phase rule. Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system Co-2 Explain various terms, laws, differentiate ideal and no-ideal solutions. Interpretation of i) vapour pressure–composition diagram ii) temperature-composition diagram. CO-3 Explain distillation of liquid solutions from temperature – composition diagram. . CO-4 Derive distribution law and its thermodynamic proof. CO-5 Solve problem by applying theory. CO-6 Explain Conductometer ,its different application,tyoes of titration, CO-7 Solve problems based on theory / equations. CO-8 Solve problems based on theory / equations.
CH-402 Inorganic and Organic Chemistry	CO-1 Students can understand Isomerism in coordination complexes apply principles of VBT to explain, bonding in coordination compound of different geometries. Explain limitation of VBT. CO-2 Student can knew and explain principle of CFT, a pply crystal field theory to different type of complexes (Td, Oh, Sq. Pl complexes) Explain: i) strong field and weak field ligand approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong ligand field ligand concept. iii) Origin of colour of coordination complex. CO-3 Identify and draw the structures aldehydes and ketones from their names or from structure name can be assigned. discuss synthesis of aldehydes and ketones. Write the mechanism reactions aldehydes and ketones. CO-4 Identify and draw the structures carboxylic acids and their derivatives from their names or from structure name can be assigned.Explain synthesis of carboxylic acids and their derivatives. Write

CH-403 Practical Chemistry	the mechanism reactions carboxylic acids and their derivatives. . CO-5 . Identify and draw the structures amines from their names or from structure name can be assigned. CO-6 Draw the structures of different conformations of cyclohexan Define terms such as axial hydrogen, equatorial hydrogen, confirmation, substituted cyclohexane, etc. CO-1 Verify theoretical principles experimentally CO-2 Interpret the experimental data on the basis of theoretical principles. Correlate the theory to the experiments. Verify theoretical principles by experiment or explain practical output with the help of theory. CO-3 Understand systematic methods of identification of substance by chemical methods. CO-4 Write balanced equation for all the chemical reactions performed in the laboratory. CO-5 Perform organic and inorganic synthesis and able to follow the progress of the chemical reaction. CO-6 Set up the apparatus properly for the designed experiments. CO-7 Perform the quantitative chemical analysis of substances and ableto explain principles behind it.

TY BSc - text for each subject

CH-505 Physical Chemistry-I	CO-1 Know historical of development of quantum mechanics in chemistry. CO-2. Understand and explain the differences between classical and quantum mechanics. CO-3. Understand the idea of wave function CO-4. Understanding of De Broglie hypothesis and the uncertainty principle CO-5. Understanding the operators: Position, momentum and energy CO-6. Solving Schrodinger equation for 1D, 2D and 3D model CO-7. Physical interpretation of the ψ and ψ2 and sketching the wave function CO-8. Applications to conjugated systems, zero-point energy and quantum tunnelling,
CH-506 Analytical Chemistry	CO-1. Students can explain basic terms in gravimetry, spectrophotometry, qualitative analysis and parameters in instrumental analysis. Such as: Gravimetry, precipitation, solubility product, ionic product, common ion effect, precipitating agent, washing of ppt., drying and ignition of ppt., linearity range, detection limit, precision, accuracy, Sensitivity, Selectivity, Robustness and Ruggedness, electromagnetic radiations, spectrophotometry, CO-2. Students can Explain Identify important parameters in analytical

	processes or estimations, explain different principles involved in the gravimetry, spectrophotometry, parameters in instrumental analysis, qualitative analysis,UV Visible spectrophotometer. CO-3. Students can Perform quantitative calculations depending upon equations student has studied in the theory. Furthermore, student should able to solve problems on the basis of theory. CO-5. students can describe procedure for different types analyses included in the syllabus. CO-6. Demonstrate theoretical principles with help of practical and design analytical procedure for given sample. CO-7 . Apply whatever theoretical principles he has studied in theory during practical session in laboratory
CH-503 Physical Chemistry Practical-I	CO-1 Students are able to operate Conductometer, Potentiometer,Refractometer and Colorimeter and estimate the concentration of different solutions.
CH-504 Inorganic Chemistry-I	CO-1 Explain electroneutrality principle and different types of pi bonding. ii. Able to explain Nephelauxetic effect towards covalent bonding. iii. Explain MOT of Octahedral complexes with sigma bonding. CO-2 To understand about inert and labile complexes and stability of complexes in aqueous solutions , Classification of reactions of coordination compounds , The basic mechanisms of ligand substitution reactions CO-3 Students can explain about position of d-block elements in periodic table. To know the general electronic configuration & electronic configuration of elements. To know trends in periodic properties of these elements CO-4 Students can understand Position,electronic configuration and properties of Lanthanides as well as actinides elementsand their applications. CO-5 A student should be able -The meaning of metal & semiconductor, the effect of temperature and impurity on conductivity of metals and semiconductor, Intrinsic and extrinsic semiconductor.,The term valance band and conduction band, n and p type of semiconductors, Non-stoichiometry and semi conductivity, Insulators on the basis of band theory,The difference between Na, Mg, and Al in terms of valence electrons and conductivity. Meaning of super conductors and their structure. o. Discovery and applications of

Industrial Chemistry-I CH-505	CO-1 Students should know the importance of chemical industry, ii. Meaning of the terms involved, iii. Comparison between batch and continuous process, iv. Knowledge of various industrial aspects CO-2 . Students know the Concept of basic chemicals, their uses and manufacturing process. physico-chemical principals involved in manufacturing process. CO-3 Students should know the importance of sugar industry their manufacturing process. Fermentation Industry- The students are expected to learn i. Importance, ii. Basic requirement of fermentation process, iii. Manufacturing of ethyl alcohol by using molasses and fruit juice. CO-4 The students are expected to learn Dyes - Students should know Dyes: introduction, Structural features of a dye; Classification of dyes, Synthesis, Structures, properties and applications of dyes Pigments: Students should know about i. Introduction, ii. Classification and general properties of pigment
CH-506: Inorganic Chemistry Practical - I	CO-1 Students can separate Basic and Acidic radicals from the given mixture. CO-2 They can prepare some complexes and alsodo the gravimetric estimations
CH-507: Organic Chemistry - I	CO-1students should know the properties chemical reactions and mechanism of Polynuclear and Heteronuclear Aromatic Compounds CO-2 Students should know the reactions and application of Active Methylene Compounds. CO-3Students should know the about Rearrangement Reaction ,types and Mechanism of the reaction. CO-4 3Students should know the about Elimination Reaction ,types and Mechanism of the reaction
CH-508: Chemistry of Biomolecules	CO-1 The student will understanding of Cell types, Difference between a bacterial cell, Plant cell and animal cell. Biological composition and organization of cell membrane, structure and function of various cell organelles of plant and animal cell. CO-2 The student will understand the types of carbohydrates and their biochemical significance in living organisms, structure of carbohydrates and reactions of carbohydrates with Glucose as example. Properties of carbohydrates. CO-3The student needs to know the types of lipids with examples, structure of lipids, properties of lipids. CO-4The student will understand the structure and types of amino acids. Reactions of amino acids. Properties of amino acids and types of protein, CO-5 The student know the classes of enzymes with subclasses and examples and Applications. Basic concepts of Endocrinology. Types of Endocrine glands and their hormones.

CH-509: Organic Chemistry Practical-I	CO-1 To develop skills required in chemistry such as the appropriate handling of apparatus and chemicals. CO-2 The student will learn the laboratory skills needed to design, safely conduct and interpret chemical research. CO-3 To expose the students to an extent of experimental techniques using modern instrumentation. CO-4 The student will develop the ability to effectively communicate scientific information and research results in written and oral formats.
CH-510 (A) : Introduction to Medicinal Chemistry	Upon completion of the course the student shall be able to understand, CO-1. The basics of medicinal chemistry, biophysical properties, overview of basic concepts of traditional systems of medicine. CO-2. Over view of the overall process of drug discovery, and the role played by medicinal chemistry in this process. CO-3. Biological activity parameters and importance of stereochemistry of drugs and receptors. CO-4. Knowledge of mechanism of action of drugs belonging to the classes of infectious and non-infectious diseases. CO-5. Enhancement of practical skills in synthesis, purification and analysis
CH-511 (A) : Environmental Chemistry	CO-1 Students can understand Concepts and Scope of Environmental Chemistry CO-2 Student can explain Hydrosphere and Water Pollution CO-3 They should apply Analytical Techniques in water Analysis CO-4 Students can study Water pollution and treatment methods
CH-601 : Physical Chemistry-II	CO-1-Students can know the different types of Electrochemical Cells,different types,emf measurements, Application of emf measurement. CO-2 Students can understand Crystal structure, crystallography and laws of crystallography, determination of crystal structure of NaCl by Bragg's method CO-3Students can know nuclear Chemistry, detection and Measurement of Radioactivity, types of radioactive decay and their applications.
CH-602 : Physical Chemistry-III	Students can know Meaning of the terms-Solution, electrolytes, nonelectrolytes and colligative properties, freezing point depression, Beckmann's method Osmosis and Osmotic pressure, Berkeley and Hartley method CO-2 They should understand Rate laws for reactions in solid state ,Applying rate laws for solid state reactions CO-**3** Student can knoe the Electronic structure and macroscopic properties in crystal,ionic solids and in insulators. CO-4 Studen can know about history of polymers, Classification of polymers Chemical bonding & Molecular forces in polymer molecular weight of polymers Practical significance of polymer molecular weights Molecular weight determination
CH-603 :	CO-1 Student can understand the theory, working and Applications of PHmetry and Potentiometry.

Physical Chemistry Practical-II	CO-2 Student can determine plateau voltage of the given G M counter,to determine the resolving time of GM counter and also determine Determine the molecular weight of given electrolyte and non-electrolyte by Landsberger's method and to study the abnormal molecular weight of electrolyte. CO-3Also Understand etermination of SO_4^{2-} and Cl^- by turbidimetric method (turbidimetric titration or calibration curve method) , to determine the molecular weight of a given polymer by turbidometry.
CH-604 : Inorganic Chemistry -II	CO-1 To know methods of synthesis of binary metal carbonyls, To understand the catalytic properties of binary metal carbonyls, To understand the uses of organometallic compounds in the homogenous catalysis, Chemistry of ferrocene CO-2 Understand the phenomenon of catalysis, its basic principles and terminologies.Understand the catalytic reactions used in industries around it. CO-3 Identify the biological role of inorganic ions & compounds, Draw the structure of Vit.B_{12} and give its metabolism,students can understand the functions of hemoglobin and myoglobin in O_2 transport and storage. CO-4 know thy types of Inorganic polymers , comparison with organic polymers , synthesis, structural aspects of Inorganic polymers ,understand the polymers of Si, B, Si and P , Inorganic polymers and their use.
CH-605: Inorganic Chemistry -III	CO-1 Student will learn the concept of acid base and their theories. They will also come to know different properties of acids and bases, Strength of various types acids CO-2 Draw the simple cubic, BCC and FCC structures. Identify the C.N. of an ion in ionic solid. CO-3 Be able to solve simple problems based on Pauling's univalent radii and crystal radii. Know how to draw Born-Haber cycle. Be able to solve simple problems based on Born- Haber cycle. Know the defects in Ionic solids. CO-4 **A student should:** Different Zeolite Framework, types and their classification Zeolite synthesis and their structure, Application of zeolites. CO-5 Various methods of nanoparticle synthesis Stabilization of Nanoparticles in solution. To know toxic chemical in the environment, to know the impact of toxic chemicals on enzyme
CH-606: Inorganic Chemistry Practical-II	Students can handle flame photometry,column Chromatography.Students are able to synthesis nanoparticles.
CH-607: Organic Chemistry-II	CO-1 Students will learn the principle of mass spectroscopy, UV spectroscopy, IR spectroscopy, NMR spectroscopy its instrumentation and can be draw the structure of organic molecules. CO-2 Students should be able to learn 1. The use of models to draw different types of disubstituted cyclohexanes in chair form 2. The geometrical isomerism in disubstituted cyclohexanes
CH-608:	CO-1 Studen can understand Retrosynthesis and Synthesis of target molecules.

Organic Chemistry-II	CO-2 Student can understand Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzynes etc, Wolff rearrangement (Step up), Hofmann rearrangement (Step down), Simmons-Smith reaction, Michael reaction. CO-3 Students can know the Preparation and Applications of reducing and oxidizing reagents. CO-4 Student can know about Terpenoids: Introduction, Isolation, Classification. Citral- structure determination using chemical and spectral methods, Student can know about **Alkaloids:** Introduction, extraction, Purification, Some examples of alkaloids and their natural resources. Ephedrine- structure determination using chemical methods.Synthesis
CH-609: Organic Chemistry Practical-II	CO-1 Student can know the Interpretation of IR and NMR spectra CO-2 Student can know the estimation of glucose,glysine, Estimation of Alkali content in Antacid using HCl CO-3 Student can know the Organic Extractions of Caffeine from tea leaves Eugenol from clovesLycopene from tomato peels Cinnamic acid from cinnamon. Trimyristin from nutmeg
CH-610 (A) : Chemistry of Soil and Agrochemicals	CO-1 Student can understand Soil Chemistry and 1) Understood various components of soil and soil properties and their impact on plant growth. 2) Understood the classification of the soil. 3) Explores the problems and potentials of soil and decide the most appropriate treatment for land use CO-2 Understood the Reclamation and management of soil physical and chemical constraints. Useful in making decisions on nutrient dose, choice of fertilizers and method of application etc. practiced in crop production. Got experience on advanced analytical and instrumentation methods in the estimation of soil. CO-3 Understood various Nutrient management concepts and Nutrient use efficiencies of major and micronutrients and enhancement techniques. Proper understanding of chemistry of pesticides will be inculcated among the students. Imparts knowledge on different pesticides, their nature and, mode of action and their fate in soil so as to monitor their effect on the environment.
CH-611(A): Analytical Chemistry-II	**After completion of the course student should able to** CO-1 Define basic terms in solvent extraction, basics of chromatography, HPLC, GC, and AAS and AES. Some important terms are: solvent extraction, aqueous and organic phase, distribution ratio and coefficient, solute remain unextracted, percent extraction, ion association complex, theoretical plate, HETP, retention time, selectivity CO-2 Explain different principles involved in the analyses using solvent extraction, basics of instrumental chromatography, HPLC, GC, and atomic spectroscopic techniques CO-3 Perform quantitative calculations depending upon equations students has studied in the theory. Furthermore, student should able to solve problems on the basis of theory CO-4 Design analytical procedure for given sample.

	10. Apply whatever theoretical principles he has studied in theory during practical in laboratory

MSc I - text for each subject

Name of the Subject	Course Outcome
CHE- 501, Physical Chemistry I	CO-1. Understand the role of computers in simulating chemical processes and analyzing data. CO-2. Quantify the ideas (not overshadowed by mathematics) about the behavior of molecules and systems in order to be able to cope with experimental testing. CO-3. Distinguish the usefulness of mathematics in Physical Chemistry and to be inspired by the charm of their application. CO-4. Thinks and reflects in the language of science avoiding the simple memorization of knowledge
CHE- 504, Physical Chemistry Practical I	CO1: Students will grasp the concept of reaction rate and its significance in Chemical Kinetics. CO2: Students will learn how to use experimental data to deduce rate laws and rate constants. CO3: Students will be familiar with the fundamental principles of colorimetry and spectrophotometry including Beer's law, Lambert- Beer's law and the relationship between absorbance and concentration. CO4: Students will be able to operate the instruments like spectrophotometer and colorimeter. CO5: Students will be able to determine the densities of the solutions and can calculate molar volume
	CO-1. To determine types of molecule on the basis of moment of inertia and rotational spectra. CO- 2. To determine the vibrations of polyatomic molecule. CO- 3. To determine quantum and classical theory of Raman effect, pure rotational Raman spectra CO- 4. To determine electronic spectra of diatomic molecules CO- 5. To determine Principle, Instrumentation and Applications of Mossbauer Spectroscopy.
CHEOD-502, Inorganic Chemistry-I	CO- 1. Student should visualize/ imagine molecules in 3 dimension. To understand the concept of symmetry and able to pass various symmetry elements through the molecule. Understand the concept and point group and apply it to molecules. To understand product of symmetry operations. CO-2 . To apply the concept of point group for determining optical activity and dipole moment Student should understand the importance of

	Orthogonality Theorem. They should able to learn the rules for constructing character table. CO-3 Apply projection operator to find out the normalized wave function for atomic orbital. Student should correlate the application of symmetry to spectroscopy.
	CO-4.Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications. 2. To learn the advance chemistry of boranes, fullerene, zeolites, polymers etc. CO-5. Organometallic chemistry of some important elements from the main groups and their applications
CHE-505, Inorganic Chemistry Practical-I	**CHE-505, Inorganic Chemistry Practical-I** CO-1: Prepare solution of required conc. and the handle laboratory equipment properly. CO-2: Perform experiment accurately and able to perform calculation. CO-3: Explain experiment and principal of experiment in detail. CO-4: Perform calculations and discuss results and write conclusions of the experiment. CO-5: Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure. CO-6: Solve problem/ numerical depending on given experimental data / information
	CO-1: Prepare solution of required conc. and the handle laboratory equipment properly. CO-2: Perform experiment accurately and able to perform calculation. CO-3: Explain experiment and principal of experiment in detail. CO-4: Perform calculations and discuss results and write conclusions of the experiment. CO-5: Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure. CO-6: Solve problem/ numerical depending on given experimental data / informatio
CHE-503, Organic Chemistry-ISemester – I	**CO-1 .** They will understand the **c**riteria for aromaticity in nonbenzenoid molecules and other advanced polycyclic aromatics Understand the chemistry of monocyclic heterocycles, nomenclature and reactions .Learn the concept stereochemistry and its importance; their rules and the concept of chirality **CO-2** Understand the role of various reaction intermediates like

	carbocation, carbanion, carbenes, radicals, and nitrenes in organic reactions; concept of NGP Able to describe mechanism of different rearrangement reactions. Appreciates the various steps involved in the molecular rearrangements. Understand the chemistry of Ylides **CO-3 .** Use synthetic reagent of oxidation and reduction for solving the problems To understand some fundamental aspects of organic chemistry, to learn the concept aromaticity, to understand the various types of aromaticity To study heterocyclic compound containing one and two hetero atoms with their structure, synthesis and reactions. **.** To know stereochemistry of organic compounds; able to do interconversion of Fischer to Newmann, Newmann to Sawhorse and vice versa, Able to assign R and S to given molecules; understand stereoselective and stereospecific reactions; acquire knowledge on topicity. **CO-4 .** To study structure, formation, stability and related name reaction of intermediates like Carbocation, Carbanion, Free Radical, Carbenes and nitrenes; Recognize neighboring group participation To study rearrangement reaction with specific mechanism and migratory aptitude of different groups. To study Ylides and their reaction.
CHE-506, Organic Chemistry Practical I	CO1: Understand the theoretical aspects behind separation, purification and synthesis of organic compounds. CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds. CO3: Design experimental set up for performing the organic reactions. CO4: Monitor the organic reactions. CO5: Describe the mechanistic aspects of organic reactions. CO6: Develop problem solving abil
CHEOD-507(D) Organic Reactions and Reagents	Course outcomes: At the end of the course, students will be able to CO1: Understand the concepts of named organic reactions and reagents . CO2: Identify the type of named organic reaction and uses of reagents. CO3: Predict the reaction conditions of organic reaction. CO4: Write the reaction mechanism. CO5: Design appropriate synthetic route. CO6: Develop problem solving ability of the students.
CHE-508, Research methodology	Course outcomes: CO1: Develop a comprehensive understanding of different research methodologies and their applications in mathematics. CO2: Cultivate critical thinking and analytical skills necessary for identifying research problems and formulating research questions. CO3: Provide practical experience in designing experiments, collecting and analyzing data, and interpreting research results.

	CO4: Foster effective communication skills for presenting research findings orally and in written form. CO5: Promote ethical research practices and awareness of responsible conduct in mathematical research CO5; Develop problem solving abilit
CHEOD- 551, Molecular Spectroscopy	Course Outcomes CO1: Remember basic concepts of molecular spectroscopy, selection rules, intensity of spectral lines and width of spectral transition. CO2: Understand principles and applications of rotational, vibrational, raman, electronic and mossbauer spectroscopy. CO3: Apply various spectroscopic techniques for gaining insights into molecular structure CO4: Analyse vibrating diatomic molecule, simple harmonic and anharmonic oscillator, Scattering of light and Raman Spectrum . CO5: Evaluate bond length, vibrational frequency, force constant and dissociation energy using spectral data. CO6: Create awareness about rotational fine structure, vibrational coarse structure, Quadrupole effects
CHE-552: Inorganic Chemistry-II	Students will be able to understand - 1. MOT and will be able to extend this in predicting reaction mechanism and stereochemistry of electrocyclic reactions. 2. The concepts in free radical reactions, mechanism and the stereo chemical outcomes. 3. The basic principle of spectroscopic methods and their applications in structure elucidation of organic compounds using given spectroscopic data or spectra.
CHE-552: Inorganic Chemistry-II	Course Outcomes: At the end of course student should able to – CO-1: Define R. S. term, configuration, microstate, paramagnetic, diamagnetic ferromagnetic, antiferromagnetic, Curie and Neel temperature. CO-2: Identify complex ions showing same R.S. terms, degeneracy of ground state terms ofmetal ions, and spin multiplicities of different configurations. CO-3: Interpret electronic spectra forspin allowed Oh and Td complexes using Orgel diagram,Magnetic properties of A, E and T ground terms in complexes and selection rules. 37 | P a g e CO-4: Calculate frequencies of absorption spectrum, 10Dq, Racah and nepholauxetic parameter for a complex, and magnetic moments of complexes CO-5: Distinguish between hemoglobin and myoglobin, transferrin and ferritin, photosystem-I and photosystem-II. CO-6: Decide role of metals in biological system, medicine, blood coagulation, oxygen storage and transport, photosynthesis and uptake and transport of iron
CHE-553, Organic Chemistry-II (4 credits, 60 L) (Pericyclic Reactions, Molecular Rearrangements, Photochemistry and Organic	CO1: Understand the concepts of pericyclic and photochemical reactions, and molecular rearrangements CO2: Learn concepts of Organic Spectroscopy. CO3: Identify the type of pericyclic and photochemical reactions

Spectroscopy)	CO4: Solve the problems based on pericyclic and photochemical reactions and molecular rearrangements
CHE- 554, Physical Chemistry Practical II	CO1: Students will grasp the fundamental principles of Conductometry, Polarography, Potentiometry and pH metry. CO2: Students will familiar with the operation of Conductometer, Polarimeter, Potentiometer and pH meter.
CHE-555: Inorganic Chemistry Practical-II	CO3: Students will understand the concepts of conductance, resistance and learn how to calculate and interpret these values
CHE-556, Organic Chemistry Practical II	CO-1: Define coordination complex, cell constant, resistance, specific conductance, equilibrium constant, absorbance, Beer's law, solubility product, chromatography, etc. CO-2: Discuss photochemistry of potassium trioxalatoferrate complex, kinetics of formation of Cr(III)-EDTA, Determination of Cu(II)and Fe (II) by solvent extraction technique. CO-3: Outline the flow-chart for synthesis of [Mn(acac)3], Chloropentaamminecobalt(III) chloride, Nitro pentaamminecobalt(III) chloride, Bis[TrisCu(I)thiourea complexes. CO-4: Estimate purity of the [Mn(acac)3], Chloropentaamminecobalt(III) chloride, Nitro pentaamminecobalt(III) chloride, Bis[TrisCu(I)thiourea complexes CO1: Understand the theoretical concepts behind organic synthesis. CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds. CO3: Design experimental set up for performing the organic reactions. CO4: Monitor the organic reactions and analyse the products using spectral results. CO5: Describe the mechanistic aspects of organic reactions
CHE-557(A), Organometallic Compounds and Inorganic Reaction Mechanism (	CO1: Define various terms in organometallic chemistry and inorganic reaction mechanism etc. CO2: Explain/Discuss various reaction mechanisms such as ligand insertion, inner and outersphere mechanism, ligand substitution reaction. CO3: Discuss 1. Structure and bonding in carbonyl and organometallic complexes, 2: Trans effect, 3. Ligand field effects, catalytic cycles, 4. Inert and labile complexes, 5. Synthesismethods of organometallic compounds, etc.
CHE-558, On Job	

Training/Internship (	CO1 Students in this course will be required to do On the Job Training (OJT)/Internship in relevant industries/government sectors/institutes, etc. to gain practical training. As a prerequisite for OJT, the department may conduct necessary lectures/workshops/seminars. The course will be run as per the guidelines of the Institute /the University and Government of Maharashtra. Most of our graduates are expected to seek employment in industries, pursue teaching careers, or establish small enterprises after obtaining their M.Sc. degree.

MSc II - text for each subject

Name of the Subject	Course Outcome
Organic Reaction Mechanism and Stereochemistry CHO-601 MJ	CO-1: Acquire familiarity with fundamental organic reaction mechanisms and stereochemistry principles. CO-2: Gain a comprehensive understanding of Theoretical Concepts to Predict Reactivity and Selectivity. CO-3: Apply concepts of reaction mechanisms and stereochemistry. CO-4: Design Synthetic Routes and Strategies.
CHO-602 MJ: Advanced Spectroscopic Methods in Structure Determination	After completion of this course, the student will student will be able to CO1: Learn the fundamental knowledge of 1H NMR, 13C NMR, 19F NMR and Mass Spectral techniques. CO2: Acquire advanced knowledge of 1H NMR, 13C NMR, 19F NMR and Mass Spectral techniques. CO3: Apply the knowledge of 1H NMR, 13C NMR, 19F NMR and Mass Spectral techniques for structure determination
CHO- 603 MJ: Heterocyclic Chemistry	CO1: Predict the molecular properties, electronic structures, and the reactivity of heterocyclic systems. CO2: Distinguish the reactivity of heterocycles, elucidating reaction mechanisms and their pathways. CO3: Evaluate the heterocyclic compounds with other organic compounds.

CHO-604 MJP: Organic Synthesis Experiments	CO1: Recall the sequential steps involved in the preparation of target compounds from given starting materials in single-stage, and double-stage preparations. CO2: Recognize the mechanisms of organic preparations and their relevance to product formation. CO3: Apply knowledge of functional group transformations to troubleshoot and optimize reaction conditions.
CHO-605 MJP: Ternary Mixture Separation	CO1: understand the concept of type determination and apply separation techniques. CO2: comprehend different purification techniques. CO3: accurately record and report physical constants. CO4: analyze microscale chemical elemental analysis. CO5: evaluate and execute qualitative estimation of functional groups. CO6: create a report on ternary mixture separation.
CHO-610 (B) MJ: Carbohydrates and Chiron Approach	At the end of the course, students will be able to - CO-1: Recall monosaccharide structures and D/L forms in Fisher projections. CO-2: Understand cyclic hemiacetal forms and anomeric configurations. CO-3: Applying Chiron approaches, they'll design syntheses of complex chiral molecules. CO-4: Analyze protective group strategies between temporary and permanent groups.
CHO: 610 (C) MJ: Medicinal Chemistry	CO1: Identify drug and learn different stages of drug design and development. CO2: Know the application of computers in drug design. CO3: Categorize various stages of Drug action and analyze various factors affecting drug action. CO4: distinguish between infectious and non-infectious disease
CHO-631 RP: Research Project	CO-1: understand key concepts and principles relevant to the research topic. CO-2: learn diverse research methodologies proficiently. CO-3: write and communicate research findings persuasively through various mediums in the form of project report CO-4: analyze and synthesize scholarly literature effectively. CO-5: evaluate research findings and methodologies critically. CO-6: design and execute original research projects independently.
SEM-II **CHO-651 MJ: Chemistry of Natural Products**	After the completion of this course, students will be able to CO1: Learn the fundamental aspects and knowledge of natural products. CO2: Know the different pathways and biogenesis of natural products CO3: Apply the gained knowledge in the synthesis of natural products

CHO-652 MJ: Advanced Synthetic Organic Chemistry	After the completion of this course, students will be able to CO1: Learn the fundamental concepts of organometallic reactions and their bonding, reactivity, and mechanism. CO2: Understand the significance of advanced organometallic reagents in organic chemistry. CO3: Employ synthetic methodologies for cross-coupling reactions, enabling the formation of CC, C-N, and other bonds.
CHO-653 MJP: Convergent and Divergent Organic Synthesis	CO-1: Learn new synthetic methodologies for the selective modification of starting materials. CO-2: Recognize the reactivity of starting materials towards different reagents and reaction conditions. CO-3: Apply multi-step synthesis strategies to construct complex molecules from simple starting materials.
CHO-654 MJP: Green Chemistry Experiments	CO-1: Know the principles of green chemistry and the importance of sustainability in chemical processes. CO-2: Identify solvent-free reactions using appropriate techniques and equipment. CO-3: Optimize green chemistry reactions in the laboratory. CO-4: Analyze the advantages and disadvantages of solvent-free reactions, green catalysts, and green solvents in comparison to traditional chemical methodologies.
CHO-660 (B) MJ: Applied Organic Chemistry Course type: Major Elective (Theory)	CO1: Gain a comprehensive understanding of impurities in organic drugs, functional dyes, polymers, and metal-organic frameworks. CO2: Demonstrate comprehension of the principles, structures, and mechanisms underlying each concept. CO3: Identify functional dyes, polymers, metal-organic frameworks and impurities present in organic drugs.
CHO-681 RP: Research Project	At the end of the course, students will be able to – 1. understand key concepts and principles relevant to the research topic. 2. learn diverse research methodologies proficiently. 3. write and communicate research findings persuasively through various mediums in the form of project report 4. analyze and synthesize scholarly literature effectively. 5. evaluate research findings and methodologies critically. 6. design and execute original research projects independently.

Head Department of Chemistry

Department of Commerce
M.com I 2023-2024 (NEP)
Program Outcome (PO)

1. Demonstrate an understanding of advanced commercial and business methods and processes, enabling learners to tackle and overcome challenges in the corporate world effectively.

2. Exhibit independent and logical thinking skills, leading to enhanced personality development and the ability to approach complex business situations with a critical mindset.

3. Recognize the significance of research in the business domain and apply research methodologies to address industry-specific problems and opportunities.

4. Acquire proficiency in various methods of data collection and interpretation, enabling learners to make informed decisions based on data-driven insights.

5. Enhance communication and analytical skills, fostering effective collaboration and problem-solving in professional settings.

6. Develop industry-ready competencies, preparing learners to thrive in the dynamic corporate environment.

7. Acquire essential knowledge to provide new insights and contribute to the promotion of a better work culture within corporate organizations.

8. Embrace and uphold correct values through capacity building and on-the-job training, reflecting ethical conduct and responsible business practices throughout their careers

BJS
Bharatiya Jain Sanghatana

भारतीय जैन संघटनेचे
कला विज्ञान व वाणिज्य महाविद्यालय
वाघोली, पुणे- 412207
राष्ट्रीय सेवा योजना

प्र.प्राचार्य
डॉ.संजय गायकवाड

कार्यक्रम अधिकारी
प्रा. चक्रधर शेळके
डॉ. स्वाती कोलट

दिनांक : 10/07/2023

"प्राचार्यांचे अभिभाषन व महाविद्यालयाची ओळख "

अहवाल

राष्ट्रीय सेवा योजना विभागा मार्फत महाविद्यालयांमध्ये दिनांक 10 जुलै 2023 रोजी सर्व विद्यार्थ्यांना महाविद्यालयाची ओळख व महाविद्यालयामध्ये चालणाऱ्या कार्यक्रम उपक्रम त्याबरोबरच महाविद्यालयांमध्ये असणाऱ्या शाखा व अभ्यासक्रम या संदर्भात माहिती करून देण्यासाठी प्राचार्यांचे अभिभाषनाचा उपक्रम राबविण्यात आला होता. या कार्यक्रमांमध्ये महाविद्यालयातील सर्व शाखेचे विद्यार्थी सहभागी झाले होते. या उपक्रमामध्ये महाविद्यालयाचे प्राचार्य आणि त्याचबरोबर महाविद्यालयातील सर्व शाखाप्रमुखांनी महाविद्यालयांमध्ये चालणाऱ्या अभ्यासक्रम, उपक्रम व वेगवेगळ्या कार्यक्रमांची माहिती विद्यार्थ्यांना दिली. त्याचबरोबर महाविद्यालयाचा सामाजिक कार्यक्रमांमध्ये असणारा सहभाग आणि भारतीय जैन संघटना यांचा असलेले सामाजिक कार्य याचीही माहिती विद्यार्थ्यांना या कार्यक्रमांमध्ये करून देण्यात आली. कार्यक्रमाचे प्रास्ताविक महाविद्यालयाचे कॉमर्स शाखेचे प्राध्यापक किशोर देसरडा यांनी केले आणि या कार्यक्रमाचे आभार डॉक्टर भूषण फडतरे यांनी मानले. या कार्यक्रमांमध्ये महाविद्यालयातील सर्व शाखेचे विद्यार्थी सहभागी झाले होते त्याचबरोबर सर्व प्राध्यापकांनी ही या कार्यक्रमांमध्ये सहभाग नोंदवला होता

(डॉ. स्वाती कोलट)
NSS कार्यक्रम अधिकारी

(प्रा.चक्रधर शेळके)
NSS कार्यक्रम अधिकारी

कार्यक्रम अधिकारी
राष्ट्रीय सेवा योजना
भारतीय जैन संघटना महाविद्यालय
वाघोली,पुणे-४१२२०७

(डॉ. संजय गायकवाड)
प्रभारी प्राचार्य
प्र.प्राचार्य
भारतीय जैन संघटनेचे
कला, विज्ञान व वाणिज्य महाविद्यालय
वाघोली, पुणे- ४१२२०७.

Bharatiya Jain Sanghatana's
Arts, Science and Commerce College
Wagholi, Pune 412207

National Service Scheme

Activity: principal - Induction for F.Y. BSc. FY. B.COM F.Y. B.A

Date: 10-07-2024

Sr.No	Student Name	Class	Sign
71	Payal vinod Tikhe	FY. B.com	PayalTikhe
72	Aarti Dipak Naikanawre	Fy. B. com	Aarti
73	kande Disha Dattaay.	B.A	
74	Riya Sanjay chavan	FY. B.Sc	Rchavan
75	Elizabeth Adam Rainulkala	fy. bba	elizabeth
76	Aishwarya Santosh Hargude	Fy. bcom	Aishwarya
77	Vaishnavi Govind Dasekar	FY. bcom.	Vaishnavi.
78	Sakshi Ganesh Aegade	F.y. b.com	Sakshi
79	Sakshi Mohan Devkar	F.y b.com	Sakshi
80	Tejaswi Govind Darekar.	f.y b.com	Tejaswi.
81	sakshiJalindarDarekar	f.y b.com	S.J.Darekar.
82	Divya Dipak Dalat	f.y b.com	Divya
83	Snehal kisan shinde	F.y. BA	
84	Karan Vyankatesh chavan	F.y. B.com	Karan
85	Prakash Rameshrafade	F.y. BA	
86	Nilam Waghmare.	f.y. B.com	Waghmare
87	Vaishnavi Ikashid.	f.y. B.com.	Vkashid
88	Kathawale Purva Sunil	F.Y. B.Com	Purva
89	Rohini Ramkishan Zore	fy. B.Com	Rhein
90	Om Dhanaji Satav	Fy. BSC	
91	Adinath Nanath Sable	Fy. B.Sc	
92	Gaurav. Bisnare.	f.y. B.com.	
93	Prajakal Hargude	FY. B.Com	
94	ABHAYKUMAR GUPTA	FY. BA	
95	Shivani Gupta	FY. BA	Gupta
96	Naikwade Maruti	Fy. BA	Naikwade
97	Balaji Khot	Fy B.COM	Khotbalaji
98	Pradip Sopan upnad	Fy B.Com	P.S. Upnad
99	Adesh Ramdas Tupare	FY. B.COM	Adesh
100	Mauli Sudam Lahane	Fy. BCom	Mauli
101	omkar Arenavary	Fy. B.com	
102	Pranav Kailas Temkar	FY B.Com	Temkar

Arts, Science and Commerce College

Wagholi, Pune 412207

Sr No			
103	Uday Shivaji Bhaskar	fy : B.Com	Uday
104	Rupesh Prahlad waydhane	fy. B. Com.	Rwaydhane
105	Avishkar sayaji wagmare	f.y.B.A	a.s.w
106	nikhil shivaji chavan	fy. B.A	Bharat
107	Pooja harkhath chaudhary	FY. B. Com	Pooja Chaudhary
108	Vaishnavi Jatindar Wanare	fy B.com	
109	Malashri Basavraj Dudhani	FY B. Com	Malashri,
110	Gauri Santosh Kharchan	F.Y. B.A	Gauri
111	Sneha Santosh Waghole	FY BA	Swaghole.
112	Aaditi Sunil Walke	F.Y. B.A	Walke
113	Suhani Digambar Walke	FY. BCom	Swalke
114	Divya Balasaheb Thite	FY. B.Com	Thite.B
115	Prathamesh Ramdas. Umap	F.y: B.A	P.R. Umap.
116	Dawkar Sahil Vishnu	FY. BA	patil.
117	Sakore sanket himat	FY. BA	
118	Ganesh Bhikuji Khadse	FY. B.A	Ganesh
119	Yash Bhagchand Shete	FY. B.A	
120	Kale Pradip & Rajesh	FY. BA.	Pkale
121	Bhosale Ashish Dada	FY. BA	Abhosale
122	Omkar Ashok Ovande	fy. BA	
123	Avinash Ashok Bhotke	fy. BA	
124	Irfan Shaikh	fy. BSC	
125	shinde someshwar	F Y BA	S.D Shinde
126	Shinde Ayush Vijay	FYBA	Ashinde
127	Pachare Yogesh Nivarth	FY BA	Yogesh
128	Rushikesh Meher	FY BSc	
129	Shubham Nirmal	FY BA	Snirmal
130	Irfan Pathan	FY BA	IPathan
131	Samarth nagar	fy BSC	S.S. Nagar
132	Handgar Pratik	fy B A	P.V. Handgar
133	Rushikesh mendhkar	fy BSc	Rushikesh
134	Vishal Patil	fy BA	

Arts, Science and Commerce College
Wagholi, Pune 412207

National Service Scheme

Activity: Principal - Induction for FY BSC, FY Bcom & FYBA

Date: 10-07-2023

Sr.No	Student Name	Class	Sign
1	Bhandare Sayali Sampat	Fy. Bcom	Sayali
2	Kandarp Sharadatha Balasaheb	Fy. BCom	Kandarp
3	Khaire Divya Subhash	F.Y. BCOM	Divya
4	Gavhane Pratiksha Shahaji	F.y B.Com	Gavhane
5	Sonawane Sakshi Keloj	F.y. BSC	Sakshi.
6	Bade Prajakta Navnath	F.y - BSC	Bade
7	Raut Mrugakshi Dnyaneshwar	F.Y BSC	Raut
8	Anisha Sunil gawade	FYB.Com	A.gawade
9	Sujata Bharatkedare	fy B.A	Sujata
10	Dhumal Vaishnavi Babar	FY.B.com	V.B.Dhumal
11	Kolhe Minal valmik	fY B.Com	M.V.Kolhe
12	Chavan Supriya Nandu.	fy - B. A.	S.N.Chavan.
13	BHORDE Siddhi Ramdas	fY-B.A	S.R.Bhorde
14	Shivale Pratiksha vijay	FY - B.A.	Shivale
15	Gaikwad Rutuja Pandurang	FY - B.A.	Rutuja
16	Undre Vaishnavi Ganesh	FY - B.A	Vundre.
17	Waghde Gauri Machhindra	FY - B.A	G.M. Waghole
18	Sakshi Milind Jadhav	FY - B.S.C	Sjadhav
19	Reshma Atul Keule	Fy - B.com	Rkale
20	Payal Pandurang Jahade	fy - B.Com	Jahade.
21	Pranali Suresh Patil	FY - B.Com	PPatil
22	Kishori Dattatray Gadse	Fy. BA.	Kad.
23	Shinde Shubhangi Shridhar	fy - B.Sc.	Shinde
24	Gawari shreya sunil	fy - BSC	Gawari
25	Sapre Ravi chaudhari	FY - B.Com	Sapre
26	Tathe Akanksha Balasaheb	fy - BSC	A.B.Tathe
27	Jadhav. Vaishnavi Atmaram	FY BSC	Jadhav
28	Kudke Gayatri Valmik	- Fy. BSC	Gayatri
29	Shinde Nikita Ram	- Fy - BSC	Nikita.
30	Sonawane Akanksha Pradip	Fy - BA	A.P.Sonawane
31	Yadav Priya Sambhaji	Fy - BA	Priya
32	Waghe. Rajnandini nagnath	FY. BSC	Raj

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SR.NO			
33)	Shaikh Ayesha Khwaja	FY.-BSC	Ayeshaikh
34)	Monika Suryavanshi	FY- B.A	
35)	Sanika Shahaji Gaikwad	FY- B.A	Gaikwad
36	Sayali Ravindra Kumbhar	FY BSC	Kumbhar
37	Sneha Satish Birajdar	FY BSC	Sneha
38	Mayuri Rajendra Gade	FY - BSc	Gade
39	Sayal Sunil Kakkad	FY - B.Com	Kakkad
40	Varsha Gajanan Makode	fy - B com	Gajanan
41	Sakshi Wagji Gutte	Fy - BSC	Sakshi
42	Komal Khandu Mohite	FY. BSC	Komal
43	Tanvi Dharmendra patole	fy - BA	Patole
44	Sakshi Ramdas Pable	fy - BA	
45.	Tanuja Somnath Gawade	FY - BA	Gawade
46.	Kalyani Tanaji Awhale	fy - BA	Kalyani
47	Payal santosh shikare	fy - BA	Shikare
48.	Mansi Mahadev Satav	fy - BA	Mansi
49	Sakshi Balasaheb Gurav	fy - BA.	Sakshi
50	Aishwarya Santosh Bodke	fy - BA	
51	Pooja Tukaram Kate	fy - BA	Kate
52	Divya Dnyaneshwar Pawar	fy - Bcom	Divya
53	Kranti Ranjit Jadhav	fy - B.Com	
54	Shubhangi Anil Jadhav	fy - BA	
55	Ashwini Uttam Tarwar	FY. B.com	
56	Anjali Haridas more	FY- B.Com	A.H.More
57.	Vaishnavi Gajanan Dhembare	fy - B.A	V.G.Dhembare
58	Dade Patal Popat	fy - B.com	
59.	Priti satish salve	FY - B.Com	Priti
60.	Jadhav Pallavi Datta	FY - B.A	Pallavi
61	Khandekar Sanika Dharba	Fy - BSC	Sanika
62	Ingale Srushti Sanjay	Fy - B.Com	Srushti
63	Gaikwad Nikita Amol	FY - B.S.C	Nikita
64	Divya Arjun Shelke	fy - B.S.C	
65	Kajal Ramchandra Jha	FY - B.S.C	Kajal
66	Komali Sanjay More	fy - B.A	More
67	Kishori Sham Pardeshi	fy - B.A	Kishori
68	Prerana Ishwar Kusalkar	fy - B.A	
69	Runali Anil Waghmare	fy - B.A	Waghmare
70	Sakshi santosh waje	fy - B.com	

Bharatiya Jain Sanghatana's
ASC College, Wagholi, Pune- 412 207

Activity Report

Department Of BBA(CA)

Academic Year 2023_2024

Activity Name / Title : - Bridge Course for FYBBA(CA) Students

Day and Date :- Form 05/10/2023 To18 /10/2023

Status of Activity :- Completed

No. of Beneficiaries :- 70

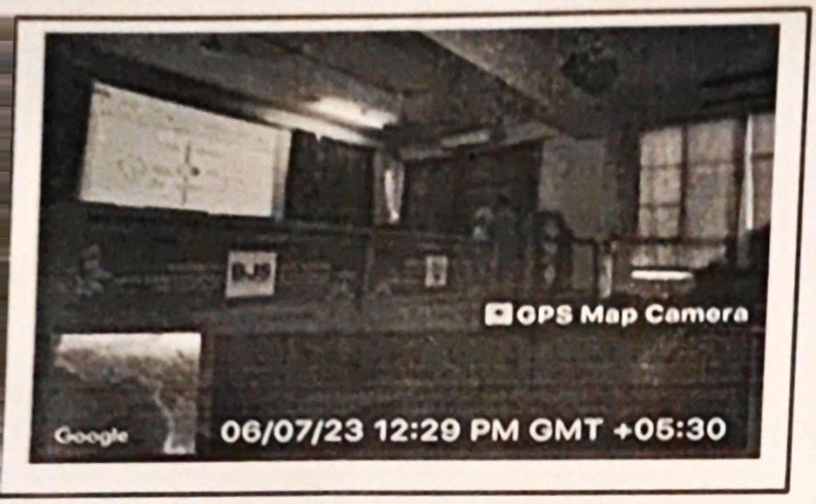
Objective of Activity: - Department of BBA (CA) organize Induction Program From 5/10/2023 to 18/10/2023 For FYBBA(CA) students . This Course was designed to improve **stage courage, soft skill development, Pronunciation, Proper English communication**

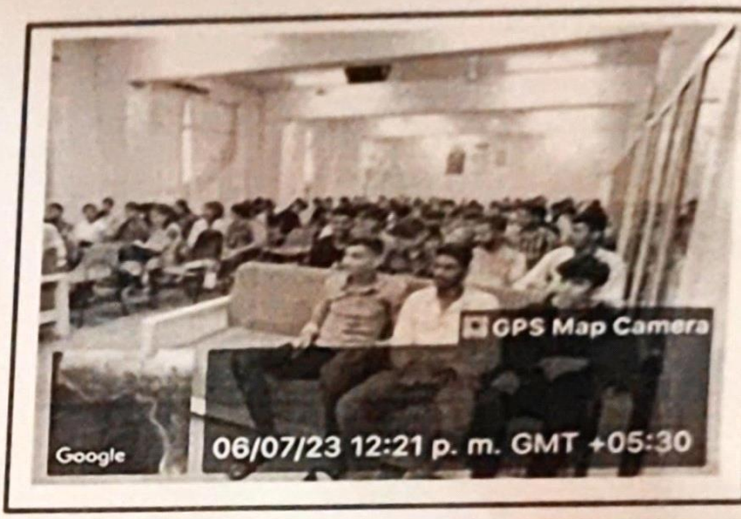
To give Basic knowledge of BBA(CA) Course to Students, To how Library as a Learning Resource, knowledge about Communication and Soft Skills, How to Prepare for Competitive Exam, idea of Programming Languages, information about MS Office, information of Computer & Operating System, Encourage students for Personality Grooming, Health and Fitness. Near about 70 students attend the lecture and clear different ideas about how they have to prepare for different Entrance exam after graduation. Outcome of Activity: - Doubt of students are cleared and Students participate actively in the program .

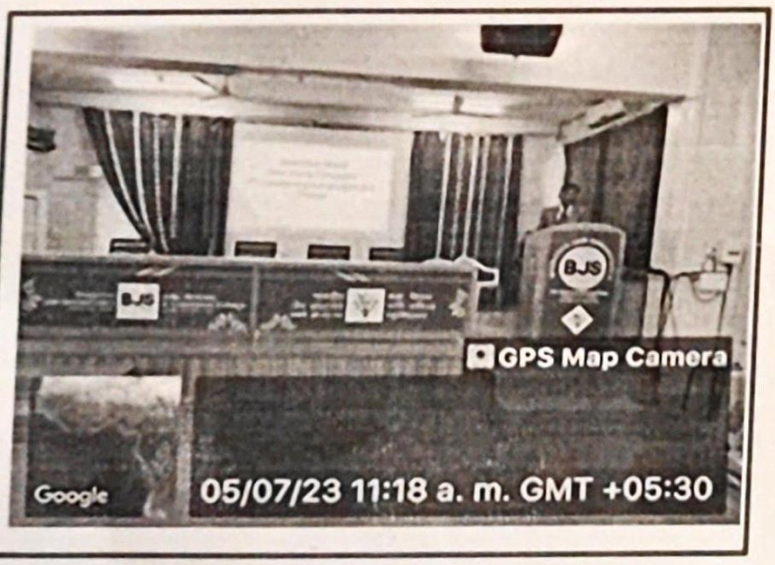
Principal Dr Sanjay D. Gaikwad ,Commerce Incharge Dr. Balwant Landge, IQAC Head Dr. Madhuri Deshmukh , BBA(CA)I Coordinator and all faculty member Guide students to improve their performance , soft skills and so on

Bharatiya Jain Sanghatana's

ASC College, Wagholi, Pune- 412 207







HOD /Coordinator	Incharge	IQAC Cordinator	Principal
Mr. Hanumant Jagtap	Dr. Balwant Landge	Dr. M.V.Deshmukh	Dr. S.D. Gaikwad

11/10/24

I/C Principal
B.J.S. A.S.C. College
Wagholi, Pune- 412207.

IQAC Co-ordinator
Bharatiya Jain Sanghatana's
rts, Science & Commerce College,
Wagholi, Pune- 412207.

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ASC College Wagholi, Pune-412207.

Department of BBA (CA)

Bridge Course Attendance 2023-24

Class :FY BBA(CA) **Time:**11:00 to 1:00pm

Sr.No	Name	Sign				
		11-07-23	12-07-23	13-07-23	14-07-23	15-07-23
1	Atkare Renuka Sachin					
2	Awhale Shruti Rajesh					
3	Bhujbal Shreya Dattatray					
4	Bidave Pavan Chakradhar					
5	Burkule Prajwal Ambadas					
6	Chavan Vaibhavi Vijay					
7	Damkondwar Janhvi Balaji		—			
8	Darekar Omkar Santosh					
9	Darekar Shardul Pathan	—		—		
10	Deshmane Vaishnavi Santosh					
11	Dhamdhere Jyotiraditya Balasaheb	—	—	—	—	—
12	Dhane Sanika Sanjay					
13	Gadade Aditya Anil					
14	Gaikwad Ganesh Rajendra					
15	Gaikwad Omkar Vilas					

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16	Gaikwad Sarthak Santosh	S.S.Gaikwad	S.S.Gaikwad	S.S.Gaikwad	S.S.Gaikwad	S.S.Gaikwad
17	Gawade Akanksha Bapusaheb	Gawade	Gawade	Gawade	Gawade	Gawade
18	Gawai Tanmay Milan	TMG	TMG	TMG	TMG	—
19	Ghodajkar Rutuja Dattatray	Rutuja	Rutuja	Rutuja	Rutuja	Rutuja
20	Haral Vedant Madan	Vedant H	Vedant H	Vedant H	Vedant H	—
21	Harpude Sakshi Laxman	Harpude	Harpude	Harpude	Harpude	—
22	Havaldar Sanika Dattatray	Sanika	Sanika	Sanika	Sanika	Sanika
23	Ingale Sakshi Sanjay	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi
24	Jadhav Gayatri Vijay	Gayatri	Gayatri	Gayatri	Gayatri	Gayatri
25	Jadhav Namrata Bhagwat	Namrata J	Namrata J	Namrata J	Namrata J	Namrata J
26	Jadhav Rutuja Vikas	Rutuja VJ	Rutuja VJ	Rutuja VJ	Rutuja VJ	Rutuja VJ
27	Jalnil Rahul Raju	Jalnil R.				
28	Jamadar Gufran Rajjak	SGR	SGR	SGR	SGR	SGR
29	Kamble Manisha Milind	Mkamble	Mkamble	Mkamble	Mkamble	Mkamble
30	Kattimani Mallikarjun Saybanna	M.K	M.K	M.K	M.K	M.K
31	Kattimani Pralhad Saybanna	Pralhad	Pralhad	Pralhad	Pralhad	Pralhad
32	Kaware Shivani Popat	Shivani	Shivani	—	—	—
33	Khaladkar Pranav Suresh	Pranav	Pranav	Pranav	Pranav	—
34	Khedkar Suraj Sambhaji	Suraj SK	Suraj SK	Suraj SK	Suraj SK	Suraj SK
35	Kujur Abhishek Sushil	AK Kujur	AK Kujur	AK Kujur	AK Kujur	AK Kujur
36	Lokhande Mayur Sandip	Mayur	Mayur	Mayur	Mayur	Mayur
37	Magar Prajwal Nanabhau					

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38	Manale Pandurang Siddheshwar					
39	Mane Vedang Uttareshwar					
40	Mathe Sanjana Santosh					
41	Mohite Sumit Suvarnasinh					
42	More Arti Umesh	A.U. More	A.U. More	A.U. More	A.U. More	A.U. More
43	Mukhekar Dnyaneshvari Laxman	PLM	PLM	PLM	PLM	PLM
44	Mulik Rani Shamrav			—	—	—
45	Nagawade Awantika Sambhaji					
46	Naikwadi Rohit Arun					
47	Navale Sahil Vilas					
48	Nikalje Prem Pravin					—
49	Ozarkar Prajwal Subhash					
50	Ozarkar Pratik Machindra					
51	Paliwal Vishakha Ravindra					
52	Pandule Ankita Rajendra				—	—
53	Patel Abhishek Kumar Arun Kumar	—	—	—	—	—
54	Pawar Shivkar Ashok					
55	Pawar Somnath Bhanudas					
56	Poman Yash Nivrutti					
57	Ranher Omkar Ganpatrao					
58	Rashinkar Srushti Kishor					
59	Raut Susenta Ishwar	S.I. Raut	S.I. Raut	S.I. Raut	S.I. Raut	S.I. Raut

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60	Rokade Sunny Ashok	Suri	Suri	Suri	Suri	Suri
61	Salunkhe Vaishnavi Bandopant	Vaishnavi	Vaishnavi	Vaishnavi	Vaishnavi	Vaishnavi
62	Satav Navanath Naresh	—	—	—	—	—
63	Satav Sakshi Anil	Satav	Satav	Satav	Satav	Satav
64	Savargave Shivratna Dipak	Shiva	Shiva	Shiva	Shiva	Shiva
65	Sawale Madhuri Rajendra	Madhu	Madhu	Madhu	Madhu	Madhu
66	Shelar Pooja Subhash	Pooja.S	Pooja.S	Pooja.S	Pooja.S	Pooja.S
67	Shinde Pranav Pravin	—	Pranav	Pranav	Pranav	Pranav
68	Shirode Anuj Pandurang	Anuj	Anuj	Anuj	Anuj	Anuj
69	Shivale Omkar Ganesh	Omkar	Omkar	Omkar	Omkar	Omkar
70	Solanke Om Himmatrao					
71	Suryavanshi Nagesh Sanjay	Nagesh	Nagesh	Nagesh	Nagesh	Nagesh
72	Thool Ankit Siddharth	Ankit	Ankit	Ankit	Ankit	Ankit
73	Thorat Dipti Prakash	Dipti	Dipti	Dipti	Dipti	Dipti
74	Thorat Shrinath Rajendra	—	—	—	—	—
75	Varpe Aniket Shantaram	Aniket	Aniket	Aniket	Aniket	Aniket
76	Agrawal Shivam Ravindra	Shivam	Shivam	—	—	—
77	Waghmare Narayan Deepak	ND Waghmare	ND Waghmare	ND Waghmare	—	—
78	Waykar Nikita Satish	Nikita	Nikita	Nikita	Nikita	Nikita
79	Waykar Sudhir Sanjay	—	—	—	—	—
80	Dagade Yogesh Balasaheb	Dagade	Dagade	Dagade	Dagade	Dagade
81	Sonavane Monika Nandu	Monika	Monika	Monika	Monika	Monika

82	Maurya Mithilesh Triloki					
83	Sarode Shubham Dattatray	Sarode	Sarode	—	—	Sarode
84	Yadav Reshma Mahendra	Reshma	Reshma	Reshma	Reshma	Reshma
85	Chavan Avina Kantilal	—	—	—	—	—

IQAC Co-ordinator
Bharatiya Jain Sanghatana's
Arts, Science & Commerce College,
Wagholi, Pune- 412207.

I/C Principal
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Program Activity Report (2023-2024)

Committee/ Department : Mathematics Date:-23/07/2023

1. Activity Name /Title : Bridge Course
2. Day / Date / Venue : 11/07/2023 to 22/07/2023
3. No. of Beneficiaries/Faculty : 57

Class	Male	Female	Total
F.Y.B.Sc.	41	16	57

4. Name of Organizers : Prof. Avhad Pradip Ramdas
5. Objective of Activity : To increase the basic knowledge of subject.
6. Outcome of Activity : Student gets overall basic knowledge about the subject.
7. Program Report : In the Academic year 2023-2024, Faculty of Science organized a short term bridge course. The duration of course was 11 days which included 33 hours theory Lectures on all Science subjects. During this course departments took lectures on basic concept of their subject. Also give the information about activities, committees and scholarships which available in college. At the end of the course students would gain overall basic knowledge about their subject and their F.Y.B.Sc. Syllabus. Also, they would be aware of the college activity & scholarships.

8. Budget and Actual Expenditure: (If Applicable)

Sanctioned Amount	Actual Expenses	Variance	Reasons/ Remarks
0	0		

Program Photos:

Student Representative	Teacher In-charge/HOD	Coordinator	IQAC Coordinator	Principal

Attachments: 1. IC sheet, Flyer on website 2. Invitation / appreciation letter
3. Students attendance 4. Published News
5. Photos with captions 6. Feedback about Activity received from students/guests.

For NAAC All documents should be in English

Bharatiya Jain Sanghatan's

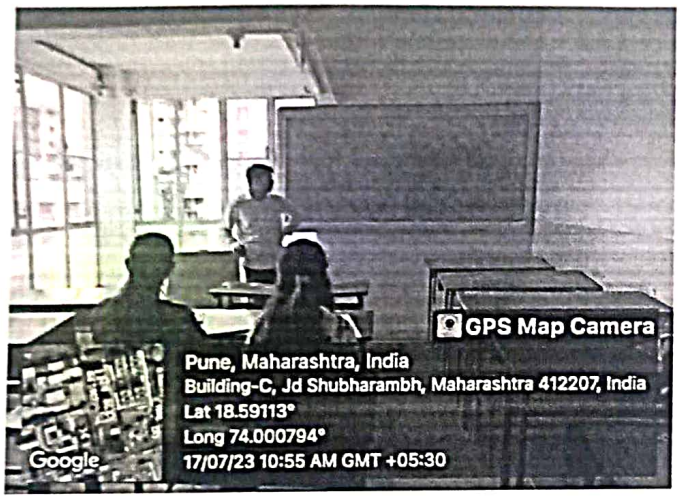
Arts, Science and commerce college Wagholi, Pune

Bridge Courses Report- 2023-24

Department of Mathematics

In the academic year 2023-24 Faculty of science organized a short-term bridge course from 11/07/2023 to 22/07/2023. Mathematics Department took 7 lectures. During this course **Prof. Avhad Pradip** taught the basic concept of Mathematics like Number system, sets, relation, function, limit, derivative, congruences & complex Number. Near about 22 students participate in this course. Students are very happy after getting the basic knowledge.

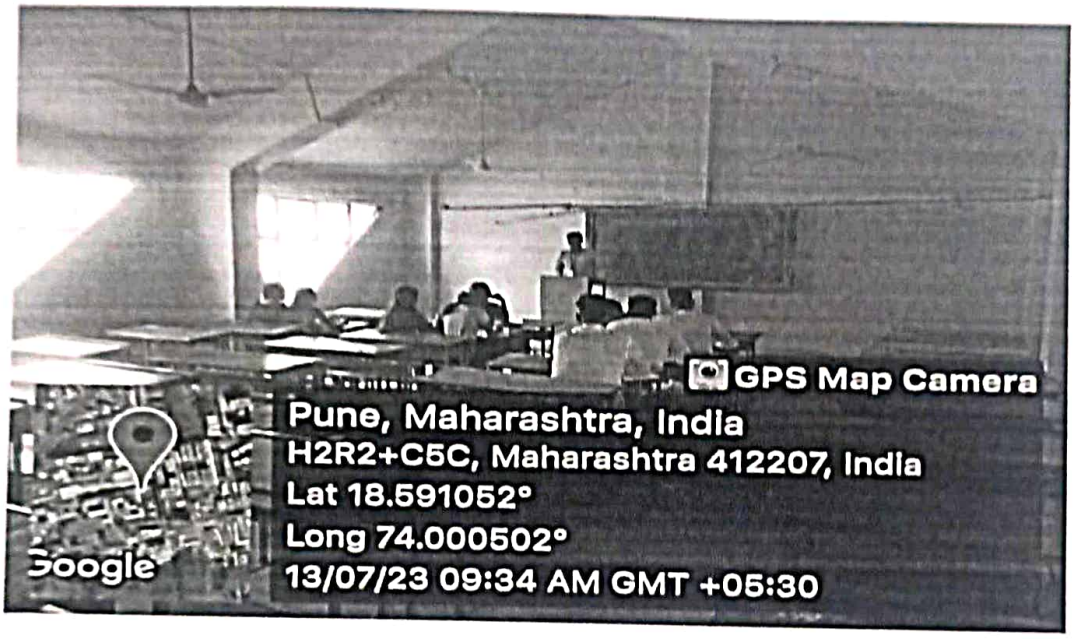
Name of Teacher- Prof. Avhad Pradip



Department of Statistics

In the Academic year 2023 2024, Faculty of Science organized a short term bridge course. The duration of course was 11 days which included 33 hours theory lectures on all Science subjects. Statistics Department took total 8 lectures in this bridge course. A total number of 22 students participated for the course. During course taught basic statistics concepts, data collection methods, Probability,Applications of statistics, Applied statistics in day to day life and statistical analysis methods to the students. Examination for the course will be conducted on 22nd July 2023. At the end of the course students gain overall basic knowledge about statistics subject and their F.Y.B.Sc. Syllabus. Also, they would be aware of the career options available in the subject.

Name of Teacher: Prof. chakradhar Shelake



Department of Botany and Committee Report

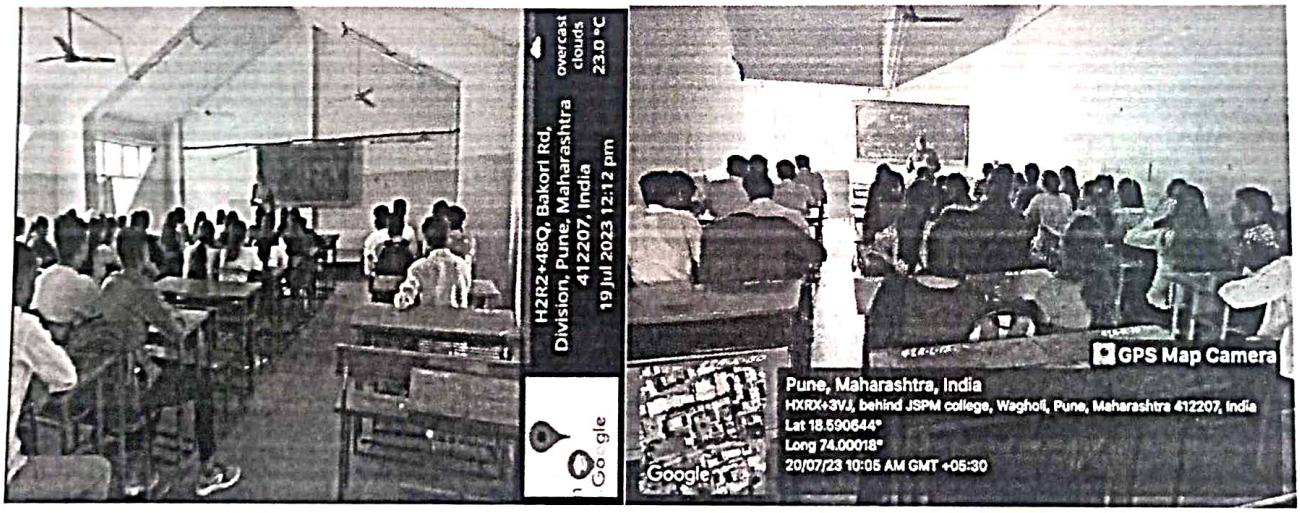
Report

Topic conducted during Bridge course are as follow-

Sr.No	Topic Name
1	Plant Kingdom - Classification and Characteristics
2	Characteristics of Prokaryotic and Eukaryotic Cell
3	Introduction to Principles of Botany/Advance Botany
4	Plant Physiology and Plant Biotechnology
5	Carrier Oriented program (COP) its importance and opportunities
6	Avishkar Activity

Name of Teacher- 1. Dr. D. N. Patil.

2. Dr. Madhuri Pagariya



Department of Chemistry

Topic- Periodic Table

In the topic first history of periodic table is introduced to all students ,periodic law, trends of periodic table conceren with atomic size ,Ionization potential ,reactivity was discussed. Also with the students How chemistry is related with day today life i.e. well explained. I have given examples of day today compounds and their bonding in chemistry.

Name of Teacher- Dr. Rupali Gulalkari

Topic: Inductive and Resonance Effect

Abstract: Formation of covalent bond, Polar and Non polar covalent bond, sigma and pi bonds , Electronic effects in organic molecules were discussed.

Inductive Effect: Inductive effect is the effect that is caused by the transmission of an electrical charge throughout a chain of atoms.

Resonance Effect: Resonance effect describes the effect on the stability of a molecule due to the interaction between pi bond electrons.

Types of resonance (+R and -R) and Inductive effect (+I and -I) were discussed.

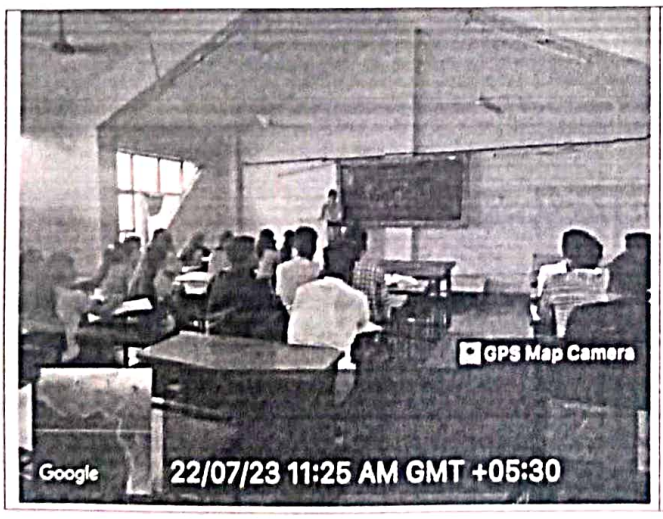
Name of Teacher- Dr. Manisha Bora

Topic: Aromaticity

Abstract: Meaning of aromatic word was explained,characteristics for aromaticity as cyclic, conjugated system,planarity.Example of Benzene was discussed with its resonating structures.Delocalisation of pi electrons and formation of electron cloud was discussed.

Rule for Aromaticity given by Huckel and how to apply was discussed with different examples as cyclobutane,cyclopropane and their number of delocalized pi electrons present in them were calculated.As presence of odd no. of pi bonds indicate the molecule will be aromatic and even no.of pi bonds molecule will be non aromatic in nature was determined

Name of Teacher- Hemlata Manvatkar

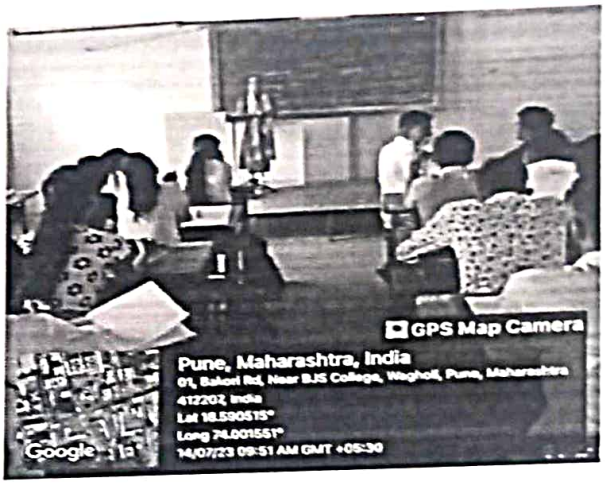


ZOOLOGY DEPARTMENT

In the Academic year 2023-2024, Faculty of Science organized a short term bridge course. The duration of course was 11 days which included 33 hours theory Lectures on all Science subjects. Zoology Department took total 7 lectures in this bridge course. A total number of 45 students participated for the course. During this course Dr. Madhuri Deshmukh (03 Lectures) and Dr. Tejal Deokar (05 Lectures) taught basic Zoology to the students. Examination for the course will be conducted on 22nd July 2023. At the end of the course students would gain overall basic knowledge about Zoology subject and their F.Y.B.Sc. Syllabus. Also, they would be aware of the career options available in the subject.

Name of the Teacher

1. **Dr. Madhuri Deshmuk** 2. **Dr. Tejal Deokar**



Department of Physics

In accordance with College Motto "Exploring youth capabilities for social service", Department of Physics had organized bridge course for F.Y.B.Sc. students during the academic year 2023-24. This program was aimed at refreshing the physics knowledge of students and nurture confidence of subject in them. Initially, choice based credit system (CBCS) was explained to the students to make them familiar with the education system. Scientific technique of study and use of various online platforms like Google classroom and Microsoft teams for academic purpose was discussed. This course inculcated strong problem solving skills along with an understanding of basic and applied knowledge of Physics among students. The lectures conducted were based on basic laws in Physics, elementary particles, atomic structure, chemical reactions, study of various instruments used in Physics, mathematical concepts like integration, derivation, graph plotting and interpretation. Finally, quiz competition was also conducted to assess the fruitfulness of bridge course.

Name of Teacher- Prof. Vipul Ghemud

Bharatiya Jain Sanghatana's

ASC College, Wagholi, Pune-412 207

Activity Report

Department Of BCA (SCI)

Academic Year 2023-2024

Activity Name / Title : - Bridge Course for FY BCA(Sci) Students

Activity Day and Date :- Form 05/10/2023 To18 /10/2023

Status of Activity :- Completed

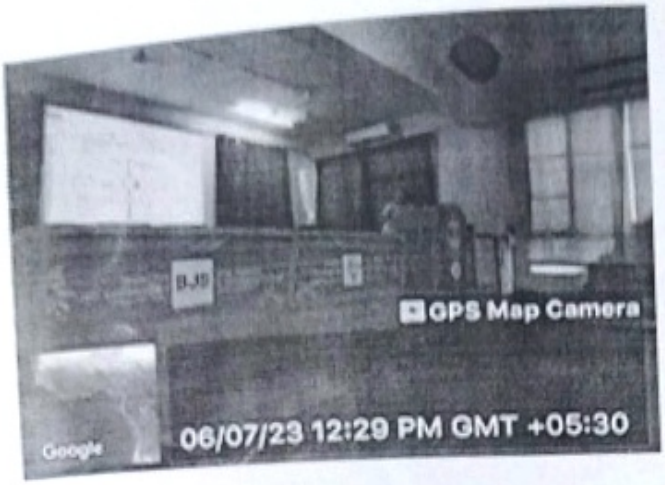
No. of Beneficiaries :- 70

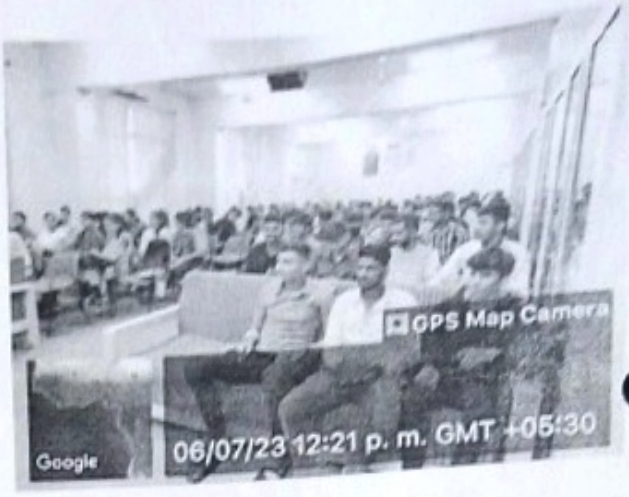
Department of BCA Science organize Induction Program From 5/10/2023 to 18/10/2023 For FY BCA (SCI) Science students . This Corse was designed to improve stage courage , soft skill development , Pronunciation , Proper English communication

To give Basic knowledge of BCA (Sci) Course to Students, To how Library as a Learning Resource, knowledge about Communication and Soft Skills, How to Prepare for Competitive Exam, idea of Programming Languages, information about MS Office, information of Computer & Operating System, Encourage students for Personality Grooming, Health and Fitness. Near about 70 students attend the lecture and clear different ideas about how they have to prepare for different Entrance exam after graduation. Outcome of Activity: - Doubt of students are cleared and Students participate actively in the program . Principal Dr Sanjay D. Gaikwad ,Science Incharge Dr. Manisha Bora ,IQAC Head Dr.Madhuri Deshmukh , BCA SCI Coordinator and all faculty member Guide students to improve their performance ,soft skills and so on

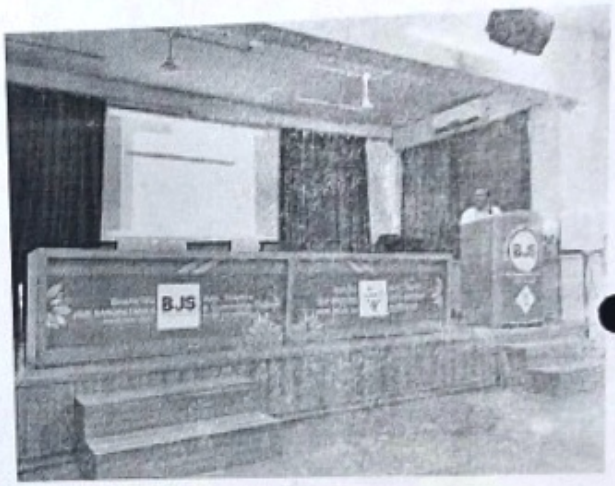
Special Remarks: - Program was beneficial for All FY BCA (Sci) Students

Bharatiya Jain Sanghatana's
ASC College, Wagholi, Pune-412 207





- Different Sessions During the Bridge Course .Students attend the session very with concentration and sincerely .



- Sessions Conducted on different topic like Competitive Exam Preparation , Math English, Library and different Computer regarding technical subject during the Bridge Course .

HOD /Coordinator	Incharge	IQAC Head	Principal
Mrs. Suvarna S. Patil	Dr. Manisha Bora	Dr. Madhuri Deshmukh	Dr. S.D.Gaikwad

15/7/23

offg. Principal
Bharatiya Jain Sanghatana's
Arts, Science & Commerce College
Wagholi, Pune-412207

Bharatiya Jain Sanghatana's

Arts, Science and Commerce College, Wagholi, Pune

Departments of BBA (CA) and BCA(SCI)

Bridge Course Program for First Year Students (2023-24)

Date: 03rd July 2023 **Time : 10:30 am**

Induction Program (Day 1)	
Welcome and compering	Mr. Jagtap H.P BBA(CA) Coordinator Mrs. Patil S. S. BCA(SCI) Coordinator
Presentation I: About BJS	Technical Team
Presentation II: About the College	Technical Team
Principal's Address	Dr. Sanjay Gaikwad (Principal)
Information About BJS	Mr.Suresh Salunkhe Project Manager ,WERC.
Introduction by Incharge	Dr. Bora Manisha Dr. Balwant Landge
Vote of Thanks	Mr. H. P. Jagtap
Campus Visit	All Faculty members of BCA (Science) and BBA (CA)

Bharatiya Jain Sanghatana's

Arts, Science and Commerce College, Wagholi, Pune

Bridge Course for BBA(CA) and BCA (Science)

Induction Programme

Time 10.00am- 1.00pm

Day	Date	Details	Resource Person
1	05 /07/2023	Technical Session (Programming Languages)	Mr. S.S. Manvatkar
2	06 /07/2023	Technical Session (Basics Of Computer & Operating System)	Mrs. Suvarna Patil
3	07 /07/2023	Technical Session (MS Word & PDF)	Mr. Jagtap H.P.
4	08/07/2023	Library as a Learning Resource	Mr. S.S. More
5	10/07/2023	Communication and Soft Skills	Dr. Monika Jain
6	11 /07/2023	How to Prepare for Competitive Exam	Mr. V. A. Ghemud & Dr. Kamble S.S.
		NSS Incubation	Mr .Shelke C.G Dr. Swati Kolte
8	12 /07/2023	Physical Education Personality Grooming Health and Fitness	Dr. Ramesh Gaikwad
		NCC	Mr. Aditya Gawade (PO CADET)
9	13 /07/2023	Power Point Presentation	Ms .Khade P.D .
10	14 /07/2023	Technical Session (Basics Of Computer)	Ms. Shinde G.A
11	15/07/2023	Technical Session (Excel Sheet)	Mrs. Shewale R. S.
12	All Days	Lab Session	Mrs. Pacharne N.S Mrs. Patel T.K. Mrs. Kadam Shivani

Mrs. Patil Suvarna — BCA(SCI)

Mr. Jagtap H.P — BBA(CA)

Dr. Mamtha Bora — Incharge

Dr. Balawant Landge — Incharge

Dr. Sanjay Gaikwad — Principal

Bharatiya Jain Sanghatana's
Arts, Science and Commerce College, Wagholi, Pune

Department Of BCA(SCI)

Bridge Course Program for First Year BCA(Sci) Students (2023-24)

Attendance Sheet

Time: 11.00 am to 1.00pm

Sr.No	Name	11/07/023	12/07/2023	13/07/2023	14/07/2023	15/07/2023
1	DARSHAN NITIN RANDIVE	Darshan R.	Darshan R.	Darshan R.	Darshan R.	Darshan R.
2	ANUSHKA SHAILENDRA RANAWARE	Ranaware		Ranaware	Ranaware	Ranaware
3	KAMINI SHARAD KOTWAL	Kotwal	Kotwal	Kotwal	Kotwal	Kotwal
4	DIVYA ASHOK MeSE	Dmese	Dmese	Dmese	Dmese	Dmese
5	MANISHA BHARAT BARAKAMBE	Mbarkambe	Mbarkambe	Mbarkambe	Mbarkambe	Mbarkambe
6	SHRUTI BALAJI BEDKE			Sbedke	sbedke	sbedke
7	RAVINDYA NDEV CHIKANE					
8	PRATIKSHA LAXMAN BHAGAT	Pratiksha			Pratikshar	Pratiksha
9	RUSHIKESH CHANDRAKANT KORE			Rkore	Rkore	Rkore
10	SAKSHI SHARAM BOTRE					
11	SHIVANI LAXMANRAO SHIRGIRE	Shivani	Shivani	Shivani	Shivani	Shivani
12	CHAITANYA SADASHIV TAPAN	C.Shirgire	C.Shirgire	C.Shirgire	C.Shirgire	C.Shirgire
13	PURVA PRADEEP JADHAV	Purva.J	Purva.J	Purva.J	Purva.J	Purva.J
14	SHUBHANGI SHEKHAR KUNDEKAR			Skundekar	Skundekar	Skundekar
15	SHRIKANT DHANANJAY BOBADE	Shrikant	Shrikant	Shrikant	Shrikant	Shrikant
16	PRATHAMESH BHALERAO	GBhosale	GBhosale	GBhosale	GBhosale	GBhosale
17	ANIKET UTTAM SHINDE	Ashinde	[illegible]	Ashinde	Ashinde	
18	GAYATRI BHASKAR NERKAR					
19	YASH RAVINDRA GHATGE	Yash.	Yash.	Yash.	Yash.	Yash.