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Internal Quality Assurance Cell

Criteria 2 : Teaching-Learning and Evaluation

2.6.1: Course Outcomes (COs) for all programmes offered by the institution are stated and displayed on the website

Course outcome

Subject : Computer Science (Optional) B.Sc. First Year

Paper Name : Computer Fundamentals   Paper Code : CS01 Semester : I

Course outcome:

Student Can get Knowledge about

1. Working of Computer, Hardware Components
2. Working of CPU
3. Writing of Algorithm for problem solving
4. Drawing Flowchart for better understanding of Problem
5. Historical background of computer generations of computer
6. Computer Languages , Computer Memory
7. Input devices , Output devices   of Computer
8. Structure of Processor
9. Introduction to Operating system
10. Use of Computer fundamental System
11. Use of all devices Connected to Computer System
12. Use of System Software and application Software
13. Use of Printer Scanner etc devices .

Paper Name : Digital electronics   Paper Code : CS02 Semester : I

Course outcome:

Student Can get Knowledge about

1. Number System and Codes , Conversion between binary, decimal , hexadecimal, octal ,
2. Arithmetic's addition , subtraction , Multiplication of Number systems
3. Finding 1's and 2's complements
4. Basic logic gates , Design of logic gates
5. Flip-flop, Counters, K-Map
6. Learn Input and output operation of all basic gates
7. Learn Boolean algebra ALU Half adder and Full adder Learn and understand combinational circuit

Practical -Course outcome

Subject : Computer Science (Optional)   B.Sc. First Year

Paper Name : office Lab   Paper Code : CS03 Semester : I

Practical -Course outcome

Office Lab – Word, Excel, Power point (PPT)
To impart the student hands on practice so that students should be able   to:
Create, Save, Copy, Delete, Organize various types of files and manage the
desk top in general, use a standard word a nd spread-sheet processing
package exploiting popular features

**After Completion of course Students able to   handle office related
work .**

Practical -Course outcome

Subject : Computer Science (Optional)   B.Sc. First Year

Paper Name : Digital Electronics Lab   Paper Code : CS03 Semester : I

Practical -Course outcome

To provide hands-on practice of the basic knowledge in digital logic and
circuits and to provide hands-on practice in some commonly used combinational
an d sequential circuits – Logic gates , Flip-flop, counters, Shift Registers, Half
adder, Full adder , ALU.

After Completion of course Students able to   handle digital kits .

Course outcome

Subject : Computer Science (Optional) B.Sc. First Year

Paper Name : Operating System   Paper Code : CS04 Semester :II

Course outcome

Students can get knowledge about:

1 Software's, Types of software's,
2 System software types of operating systems historical development of operating system single user and multi user operating systems
3 Windows operating system
4 Handling of operating   system
5 Study about Components of operating system
6 Process management
7 Device Management
8 Storage management
9 File management of operating system
10 Deadlock
11 Disk management
12 Input and output management
13 Operating system as a resource management
14 Different operation and functioning of operating system
15 Security of operating system
16 Control panel
17 Setting

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Course outcome

Subject : Computer Science (Optional)   B.Sc. First Year

Paper Name : Programming in C   Paper Code : CS05 Semester :II

Course outcome

Students can get knowledge about:

1   Basic programming skill
2   Developing small programs for solving problems
3   Solve basic problem with the help of algorithm and flowchart
4   It is further beneficial for software development
5   Students able to develop small application program

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Course outcome

Subject : Computer Science (Optional) B.Sc. Second Year

Paper Name :Advance C Programming   Paper Code : CS07 Semester :III

Course outcome

Students can get knowledge about:

1. Advance programming skill
2. Developing Big programs for solving problems
3. Solve Complex problem with the help of algorithm and flowchart
4. It is further beneficial for software development
5. Students able to develop small and big application program

- ✓ Illustrate the flowchart and design an algorithm for a given problem and to develop C programs using operators
- ✓ Develop conditional and iterative statements to write C programs
- ✓ Exercise user defined functions to solve real time problems
- ✓ Inscribe C programs that use Pointers to access arrays, strings and functions.
- ✓ Exercise user defined data types including structures and unions to solve problems
- ✓ Inscribe C programs using pointers and to allocate memory using dynamic memory management functions.
- ✓ Exercise files concept to show input and output of files in C
- ✓ Study of all topics listed Structure, function, Pointer, File Handling, Graphics in C

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Advance C Programming Lab CS09

1. Program for swapping of numbers by using call by reference.

2. Program to pass array to function.

3. Program for passing structure pointer to function.

4. Program for string manipulation function.

    4.1. String copy

    4.2. String concatenation.

    4.3. String compare.

    4.4. String length.

    4.5. String reverse.

5. Program for reading/writing text file.

6. Program for reading/writing binary file

7. File copy program

8. Program to modify a record from binary file.

9. Program to delete a record from binary file.

10. Program for conditional compiling.

11. Program on macro substitution.

12. Program for data conversation.

13. Program to draw simple picture using graphics function.

14. Program using command line argument.

15. Program to demonstrate storage class

    15.1 Local variable /automatic

    15.2 Global variable/ external

    15.3 Static Variable

16. Program to sort names

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Course outcome

Subject : Computer Science (Optional) B.Sc. Second Year

Paper Name :Data Structure   Paper Code : CS08 Semester :III

Course outcome

Students can get knowledge about:

1. Introduction to Data structure
2. Linked list
3. Stack, queue, and recursion

Data structure Lab Using C –CS 010

1. Traversing n item using Array

2. Implementation of Bubble sort using c

3. Push and Pop Operation using stack

4. Traversing n item from the linked list

5. Insertion and deletion item from the queue

6. Linear and binary search algorithm using c

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Course outcome

Students can get knowledge about:

1. Introduction to object oriented Programming oops
2. Function overloading
3.   Constructor and destructor

Programming in C++ Lab CS013

1. Program to illustrate the working of objects and class in C++ Programming
2. Program for Inline Function.

3. C++ Program to demonstrate working of default argument

4. C++ Program to demonstrate working of default argument

5. Program to demonstrate the Call by reference

6. Program to demonstrate manipulators

7. Program for Function Overloading

8. C++ program to demonstrate the working of friend function

9. Program to demonstrate the constructor

10. Following is a simple example of copy constructor.

11. Binary Operator Overloading Example Program

12. Simple Program for Unary Operator Overloading Program

Course outcome

Subject : Computer Science (Optional) B.Sc. Second Year

Paper Name :DBMS Using SQL   Paper Code : CS012 Semester :IV

Course outcome

Students can get knowledge about:

1. Basic concept
2. Data modelling and design
3. Entity relationship data model
4. Relational algebra
5. Introduction to oracle

Database Management Lab using SQL cs014

1. Design five schema for any organization
2. College, School, Hospital, Company, Bank
3. Draw E-R Diagram for same
4. Solve at least 10 relational algebraic queries

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Course outcome

Subject : Computer Science (Optional) B.Sc. Third Year

Paper Name :Software Engineering   Paper Code : CS015 Semester :V

Course outcome

Students can get knowledge about:

1. Introduction to Software and Software engineering
2. Software Process and Process Model
3. Agile
4. Principle That Guide Practice

Software Engineering Lab Cs017

Case study Based on Various Models

1. Plan a software engineering process life cycle , including the specification, design, implementation, and testing of software systems that meet specification, performance, maintenance and quality requirements

2. Able to elicit, analyze and specify software requirements through a productive working relationship with various stakeholders of the project

3. Analyze and translate a specification into a design, and then realize that design practically, using an appropriate software engineering methodology. Know how to develop the code from the design and effectively apply relevant standards and perform testing, and quality management and practice

4. Able to use modern engineering tools necessary for software project management, time management and software reuse

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Course outcome

Students can get knowledge about:

1. Introduction to HTML 5
2. Introduction to Javascript
3. Cascading Style Script

Web designing Lab CS016

Practical based on CS016

1.   Create a simple website by using Visual Studio Express
2.   Create additional pages
3.   Embedding Content
4.   Create a webpage using <table> and <div> elements
5.   Create a web pages using conditional and looping statements. 6. Create a calculator webpage
6.   Create a Webpage to introduce National Bird/Animal/Emblem/Flower
7.   Learn more about positioning by adding more <div> elements to the webpage to define a header and footer for the page. Use CSS style rules to set the position. 9. Learn more about CSS selectors by adding more elements

to the page and try setting the format by selecting the elements without using an id.

8.   10. Learn more about colors by changing the color scheme, using RGB values

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Course outcome

Subject : Computer Science (Optional) B.Sc. Third Year

Paper Name :Data Communication and networking

Paper Code :   CS019
Semester :VI

Course outcome

Students can get knowledge about:

1 Introduction Communication System, Components of communication system, Computer network Advantage and applications of computer n/w. point-to-point and multipoint line configuration, LAN, MAN and WAN. Analog and Digital signals, Data Transmission: Parallel and Serial, Synchronous and Asynchronous transmission, Transmission Mode: Simplex, half-duplex and full-duplex. Network Topologies Mesh, Star, Tree, Bus and Ring and Hybrid Topology (Advantages and disadvantages of each)

2   Transmission media Guided and unguided media, Twisted-pair, UTP and STP cable, coaxial cable, Optical Fiber cable, Radio waves, Microwaves, Satellite Communication (Transmission characteristics and advantages of each type) Modulation & Multiplexing Concept of modulation and demodulation, Digital-to-analog conversion, Amplitude Shift Keying (ASK)/AM, Frequency Shift Keying (FSK)/FM, Phase Shift keying (PSK)/PM.

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3 The Mobile Telephone System: First Generation(1G), Second Generation(2G), Third Generation(3G), Internet over cable, Spectrum Allocation, cable Modem, ADSL Versus Cable.

Cs021

Seminar on Any topic in Computer Science

Course outcome

Subject : Computer Science (Optional) B.Sc. Third Year

Paper Name :Ethics and Cyber Law

Paper Code : CS020 semester VI

Course outcome

Students can get knowledge about:

1 Basic Concepts of Technology and Law, Understanding the Technology of Internet, Scope of Cyber Laws, Cyber Jurisprudence. Law of Digital Contracts The Essence of Digital Contracts.

2 The System of Digital Signatures. The Role and Function of Certifying Authorities. The Science of Cryptography, E-Governance, Cyber Crimes and Cyber Laws. Introduction to Intellectual Property.

3 Information Technology Act 2000 Cyber Law Issues in E-Business Management. Major issues in Cyber Evidence Management, Cyber Law Compliancy Audit, The Ethics of Computer Security. Relevant Rules Notifications, Information Technology (Amendment) Act, 2008.

CS022

Swa. Sawarkar College, Beed

Department of English

Subject : Compulsory English

BA/BSc. First Year

Paper Name : A Course in Communicative English – I

<u>Subject Outcomes</u>

1. To make the students aware of basic language skills.

2. To train them to read and write well in English

3. To make the students competent speakers and listeners of English.

4. To enhance the confidence level of the students for application of English.

5. To develop word power of the students.

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Department of English

Subject : Optional English (SemesterIII)

BA. : Second Year

Paper Name : Literature in English I (V)

Subject Outcomes

1. To make the students aware of literature in English.

2. To make the aware of diverse cultures presented in literature.

3. To help the students develop their ability to compare different literary worlds.

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Department of English

Subject : Optional English

BA. : Second Year (semester IV)

Paper Name : Periods of British Literature(VII)

<u>Subject Outcomes</u>

1. To make the students aware of British literature.

2. The students would have developed understanding of British literature to a

   fair extent.

Course outcome B.Sc. Botany

Course II- Morphology of Angiosperms

Learn about the basic body plan of any flowering plant.

Study different habits of plant.

Study general characteristics and modifications of Root, stem and leaves.

Know structure of Reproductive parts inflorescence and flower.

Study types of inflorescences

Become familiar with types of fruits and their dispersal mechanisms.

Course III-Practical

Study modifications of Root, stem and leaves with the help of suitable examples.

Observe structure of a typical flower.

Study diversity in leaves.

Course V- Histology, Anatomy and Embryology

Study different types of tissues present in plant body.

Study anatomy of Root, stem and leaf of dicot (sunflower) and monocot (maize) plant.

Inform students about development of embryo (crucifer type)

Make students familiar with the process of double fertilization and its significance.

Study different types of ovules.

Study types of endosperm.

Course VI Practical

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Develop skill of hand sectioning and double staining.

Observe types of ovule and endosperm with the help of permanent slides.

Course VIII Plant Ecology

Study light, temperature and water as an ecological factor.

Explain morphological, physiological and anatomical adaptations in hydrophytes, xerophytes, halophytes and epiphytes.

Study bio geographical regions and vegetation types of India.

Study about community characteristics.

Study structure and functions of ecosystem.

Course X Practical (Plant Ecology)

Observe morphological and anatomical adaptations in hydrophytes, xerophytes, halophytes and epiphytes with the help of temporary preparations.

Make students familiar with quadrate method.

Estimate IVI of grassland ecosystem.

Determination of water holding capacity of different soils.

Determination of percent leaf area injury of different infected leaf samples.

Determination of pH of different soils.

Course XII Plant Physiology

Study processes like diffusion, osmosis and imbibition.

Study the process of water absorption and ascent of sap.

Know about the requirement of mineral nutrition for plant growth.

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Brief account on nomenclature, classification, chemical nature, mechanism of action of enzymes.

Know about the plant growth and growth hormones (Auxins, gibberlins,cytokinins,ethylene)

Understand the process of photosynthesis, Respiration and transpiration.

Course XIV Practical (Plant Physiology)

Determination of osmosis by potato osmoscope

Determination of plasmolysis in Tradescantia leaves.

Separation of photosynthetic pigments by paper chromatography.

Study about effect of different light intensities and colours of light on

Photosynthesis.

Demonstrate isolation of starch and pectin.

Detect activity of enzymes oixdase, peroxidase, catalase and dehydroganase.

Course XVI (A) Diversity of Angiosperms-I

Study about biodiversity and its types

Explain Endemism and major hot spots in India.

Study the major causes for loss of biodiversity and methods for biodiversity conservation.

Explain outline of different systems of plant classification (Linnaeus, A.P.Decandolle, Bentham and Hooker)

Study of different characteristics of plants of families Magnoliaceae, Nymphaeaceae papaveraceae, , Brassicaceae, capparidaceae Rutaceae,lythraceae,cucurbitaceae, apiaceae,etc.

Course XVIII Practical (A) Diversity of Angiosperms-I

Inform students about the technique for preparation of herbarium

Study of analytical and synthetic characteristics

Make students familiar with the use of taxonomic keys.

Study of different characteristics of plants of polypetalous families Magnoliaceae, Nymphaeaceae,papaveraceae,capparidaceae Brassicaceae, Rutaceae, Rhamanaceae,combretaceae,lythraceae,cucurbitaceae, apiaceae etc with suitable examples.

Course XX (A) Diversity of Angiosperms-II

Study methods of plant identification like herbarium,botanical garden and taxonomic keys.

Explain origin of angiosperms with the help caytonialean theory,Bennetitalian teory and ranalian concept.

Study principles and rules of ICBN.

Study modern trends in taxonomy like cytotaxonomy, chemotaxonomy, numerical taxonomy.

Study general outlines of system of plant classification (Engler and prantle,Hutchinson,Takhtajan)

Study of characteristics of plants of gamopetalous families like Asclepiadaceae ,scrophulariaceae,oleaceae,convolvulaceae,verbenaceae,Amranthaceae,Euphorbiac eae and Monocot families like orchidaceae,Liliaceae and commelinaceae.

Course XXIIPractical (A) Diversity of Angiosperms-II

Study of characteristics of plants of gamopetalous families like Asclepiadaceae, scrophulariaceae,oleaceae,convolvulaceae,verbenaceae,Amranthaceae,Euphorbiace ae and Monocot families like orchidaceae,Liliaceae and commelinaceae

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Study of different types of stomata and trichomes.

Identification of plants by using flora.

Study different types of pollengrains.

B. Sc. First Year Semester I:

Paper I: Inorganic Chemistry

After the completion of this course student will

Understand different fundamental principles and explain composition of the atom.

Able to know the trends in different periodic properties

Recognize the chemical behaviour of elements.

Explain comparative studies of S-block elements and their biological importance.

Compare P-block elements with their compounds like hydride, oxide and inter-halogen.

Paper II: Organic Chemistry

After the completion of this course student will

Able to understand the chemical bonding in organic molecules.

Know the mechanism of bond breaking and bond forming in organic reactions.

Recognize the different isomers and isomerism phenomenon related to reactivity of molecule.

Able to write, identify the structures of different configurations of stereoisomers.

Understand the nomenclature, methods of formation and chemical reactions of alkanes and alkenes.

Define and explain concept of aromaticity and electrophilic substitution reactions of arens.

Distinguish between alkyl and aryl halides with examples.

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B. Sc. First Year Semester II:

Paper IV: Physical Chemistry

After the completion of this course student will

Apply the basic concepts in mathematics to concepts in chemistry.

Manipulate the gas laws to describe real and ideal gas behaviour.

Define and explain the terms order and molecularity of the reaction.

Recognise intermolecular forces in liquid and classification of liquid crystals.

Explain laws of crystallography and its importance in determination of crystal structure.

Define and explain different colloidal systems and recognise its application in day today life.

Paper V: Inorganic Chemistry

After the completion of this course student will

Understand chemical properties of noble gases and know the structure and bonding in Xenon compounds.

Define types of bonds and explain VBT, VSEPR theory and MOT of bond formation.

Understand the concept of hybridisation and apply it to different molecules and ions.

Explain basic concepts like isotopes, isobars, mass defect and binding energy.

Able to write, the nuclear reaction as the consequences of emission or bombardment of nuclear radiations.

Recognise the importance of volumetric analysis and use of indicators therein.

B. Sc. First Year Semester I+II:

Paper III+IV: Lab Course I+II

After the completion of this course student will

Prepare standard solution by acquiring a skill of weighing.

Acquire analytical skills for the identification of unknown acidic and basic radicals.

Determine physical properties such as surface tension, density, viscosity by using suitable devices.

Acquire the skills useful for quantitative analysis.

Acquire necessary laboratory skills required for organic qualitative analysis and

identify the nature, functional group, elements of different class of organic compounds.

B. Sc. Second Year Semester III:

Paper-VII Organic Chemistry

After the completion of this course student will

Able to know types of alcohols, their methods of formation, physical and chemical properties and uses.

Know the methods of formation, physical and chemical properties of phenol as well as electrophilic Substitution reaction of phenol with mechanism.

Understand the preparative methods, physical, chemical properties and represent nucleophilic addition reactions of aldehydes and ketones.

Explain the strength of acidity in carboxylic acids and physical, chemical properties of different carboxylic acids.

Explain the synthesis and chemical reactions of nitro-alkanes and amines.

Paper VIII: Physical Chemistry

After the completion of this course student will

Define and explain the basic concepts in thermodynamics.

Describe the first and second law of thermodynamics and their development.

Explain Hess's law and its applications.

Recognise the importance of the terms entropy and free energy in chemical systems.

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Explain the concept of equilibrium and its relationship with free energy.

Describe Le Chatelier's principle and recognise its importance in chemical reactions.

Paper IX: Lab Course III (Physical and inorganic chemistry)

After the completion of this course student will

Acquire the basic skills of representation of data in tabular and graphical form.

Apply suitable formula to find out value of different physical properties.

Acquire necessary skills like filtration, digestion, drying, decantation etc. useful for gravimetric analysis.

Realise complex formation tendencies of different metal ions by titrating them with EDTA by using suitable indicator.

B. Sc. Second Year Semester IV:

Paper X: Inorganic Chemistry

After the completion of this course student will

Know and study the general characteristics of first transition series elements.

Explain Werner's theory of coordination compounds and apply EAN rule.

Explains isomerism in coordination compounds and represent their IUPAC names.

Explain the general characteristics of lanthanide and actinide elements.

Understand the concept of lanthanide contraction and its consequences.

Describe the occurrence and position of actinides in periodic table and explain their radioactive behaviour.

Explain the theories of Acid and Bases and distinguish them.

Study the physical properties, types of a solvents and non-aqueous solvents with their general characteristics.

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Paper XI: Physical Chemistry

After the completion of this course student will

Explain the terms involved in phase rule equation.

Interpret phase diagrams and their application for heterogeneous equilibriums.

Apply the principles of electrochemistry to conductance and electrolytic systems.

Explain Ostwald dilution law with its limitations and Kohlrausch's law and its applications.

Explain the concept of electrode potential and significance of electrochemical series.

Explain the use of electrical energy in initiating chemical reactions.

Paper XII: Lab Course IV (Physical and Organic chemistry)

After the completion of this course student will

Acquire skills to operate instruments like conductometer, pH meter, colorimeter, polarimeter, refractometer and use it for quantitative analysis or verifying established facts.

Develop basic skills for the synthesis of organic compounds.

Recognize the basic practical skills for the synthesis and analysis of organic compounds.

Recognise the theory involved by doing the experiments of organic estimations.

Demonstrate ability to work independently as well as within a team.

Write comprehensive reports on experiments such crystallization, distillation, synthesis

and filtration processes.

Communicate the technical knowledge lucidly.

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B.Sc. Third Year Semester V:

Paper XIII: Physical Chemistry

After the completion of this course student will

Recognise the importance of quantum chemistry and quantisation of energy.

Recognise importance of spectroscopic techniques in determination of structural aspects of molecule.

Explain radiative and non radiative transitions by means of a Jablonski diagram.

Explain the relationship between physical properties and molecular structure and its application in determining structure of molecule.

Recognise the importance of nanoscience in the present day science and technology.

Paper XIV: Organic Chemistry

After the completion of this course student will

Able to identify unknown organic compound by using different literature data and molecular formulae by means of NMR spectroscopy

Explain the preparation methods of various organometallic compounds and able to write their structures and chemical reactions.

Explain active methylene compounds and their role in variable important name reactions.

Define fats, oils and detergents and explain the concepts like saponification value, acid value and iodine value.

Recognise the importance of processes of manufacture of manufacture/extraction of oils, fats and detergents in daily life.

Illustrate chemical structures, stereochemistry and chemical reactions.

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Paper XV: Lab Course V (Organic and Inorganic Chemistry)

After the completion of this course student will

Acquire the skill of separation of organic compounds by the application of physical and chemical processes.

Acquire skills like crystallisation, purification, drying etc. useful in the identification of organic compound by means of qualitative analysis.

Able to identify two acidic and two basic radicals by means of semi-micro analytical technique.

Able to separate two components from the binary solution and their estimation by volumetric and gravimetric method.

B.Sc. Third Year Semester VI:

Paper XVI: Inorganic Chemistry

After the completion of this course student will

Explain different theories of coordination compounds and their application to various geometrical complexes.

Know electronic transitions in metal complexes and able to draw Orgel energy level diagram.

Explain electronic spectrum of complex metal ion.

Define and classify organometallic compounds and explain nomenclature along with physical and chemical properties of various compounds.

Know essential and trace elements in biological process in living systems.

Explain different chromatographic techniques and recognize its application.

Paper XVII: Organic Chemistry

After the completion of this course student will

Draw molecular orbital picture of hetrocyclic compounds and explains their methods of synthesis as well as mechanism of electrophilic or nuecleophilic substitution reactions.

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Define and classify carbohydrates and explain mechanism of mutarotation.

Classify synthetic polymers on the basis of nature of synthesis and explains methods of synthesis of polymers and rubbers.

Define and classify synthetic drugs and dyes and explain methods of their synthesis.

Paper XVIII: Lab Course VI (Organic and Physical Chemistry)

After the completion of this course student will

Recognise the importance of accuracy in the estimation of different commercial samples used in daily life.

Acquire the skill of purification by means of synthesis of organic compounds and checking its purity by TLC method.

Able to do the quantitative analysis of different samples by using instrumental techniques.

Determine physical properties like interfacial tension, refractive indices, free energy by using suitable device.

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Course Design: 2020-21

Semester: I	CLASS: B.Sc.I	SUBJECT: Physics
	Course Title: Mechanics and properties of matter	**Course No.: I**
Month	**Course Content**	**Course Outcome**
July	**1. Mechanics: - 13 periods** Compound Pendulum- expression of time period, Interchangeability of centre of suspension and oscillation Kater's Pendulum.Newton's law of Gravitation (Statement only) , Gravitational Field , Gravitational Potential, Gravitational Potential of mass, Gravitational potential and field due to spherical shell and solid sphere (at a point, outside , inside and on the surface)	• Understand the dynamics of different types of pendulum and determines 'g'. • Understand concept of gravitational potential and intensity and Calculate it for various objects
August	**Elasticity: - 10 periods** Introduction, Moduli of Elasticity (Elastic constants), Twisting couple on a cylinder. Bending of Beam – Bending moment, cantilever loaded at free end – (a) When weight of beam is ineffective, (b) When weight of beam is effective, Depression of Beam loaded at centre	• Understand the elastic properties of matter and expression of bending beam with its application as a cantilever.
September	**3. Viscosity and Surface Tension: 12 Periods** **Viscosity** - Introduction, energy of liquid in motion, Bernoulli's Theorem, practical applications: (i) Law of hydrostatic pressure (ii) Filter pump, Poiseuille's formula. **Surface Tension** - Introduction, Difference of pressure across a curved surface, Determination of S.T. by Jaeger's method.	• Understand concept of fluid flow and pressure energy in fluids. • Bernoulli's Theorem and its applications • Design the experiment to determine coefficient of viscosity by using Poiseuillie's equation. • Understand concept of surface tension and its relation with excess pressure and radius of curvature. • Determine the surface tension by Jaeger's method from experiments.
October	**4. Ultrasonic and Acoustics: - 10 periods** **Ultrasonic** - Piezo -electric effect, Piezo -electric Generator, magnetostriction effect, Magnetostriction oscillator, Applications of ultrasonic-Depth of sea, Chemical effects, Medical applications **Acoustics** - Reverberation, Acoustical demands of an auditorium, Sabine's Law- Derivation of Reverberation time, conditions of good acoustical designs of room.	• Understand concept of sound and to classify sound frequencies. • Understand piezoelectric effect, Magnetostriction effect. • Learn Generation, Detection and

		Applications of ultrasonic waves by Piezoelectric and Magnetostriction oscillator.

Pedagogy for Course Delivery:
Class Room Lectures, Demonstrations, ICT lectures including video clips, PPTs etc., assignments, tests

Teacher   **HOD**   **Principal**

Semester: II	CLASS: B.Sc.III	SUBJECT: Physics
	Course Title: Electricity and Magnetism	Course No.: V
Month	Course Content	Course Outcome
Nov	**1) Vector Algebra : - 12Periods** Dot and cross product (Revision), scalar triple product and it's geometrical interpretation, vector triple product	• Manipulate vectors to perform geometrical calculations • Calculate and interpret derivatives in up to three dimensions. • Integrate functions of several variables over curves and surfaces. • Use Stokes theorem and the Divergence theorem to compute integrals.
Dec	gradient of a scalar and it's physical interpretation. Divergence and curl of vector Function and their physical interpretation, line, surface and volume integrals, Gauss's divergence theorem and Stoke's theorem.	
Jan	**2) Electrostatics: - 13 Periods** Coulomb's Law , Electric field , field due to point charge, flux of electric field, Gauss's law (with proof) , Differential from of Gauss law , electric potential , potential due to a point charge ,Potential and field due to electric dipole. Dielectrics, polarization of dielectric, Gauss's law in dielectrics, Relation between **D, E** and **P.**	• Learners understand the theoretical and mathematical concepts of Electric Charges and its Properties and Electrostatics forces and fields of different charge distributions, the concept of Electric potential due to different charge distributions • Also the students will learn about the capacitance, dielectrics and its polarization.
Feb	**3) Magnetostatics: - 10 Periods** Magnetic field , Magnetic induction , magnetic flux , Biot-Savart law, Magnetic induction due to straight conductor carrying current , magnetic induction on the axis of solenoid Ampere's Law, Differential form Ampere's Law, Moving coil ballistic Galvanometer - expression for charge.	• Understand the concept of magnetic concepts and laws and implements them for the determinations of various conductors • Learn functioning of Moving coil ballistic galvanometer •
Mar	**4) Transient Currents: - 10 periods** Growth and decay of current in a circuit containing L and R , charge and discharge of a capacitor through resistor, Growth and decay of charge in LCR circuit.	• Demonstrates LR,CR and LCR circuits and calculate their time constants.

Teacher   **HOD**   **Principal**
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Course Design: 2019-20

Semester: III	CLASS: B.Sc.II	SUBJECT: Physics
	Course Title: Modern and Nuclear Physics	Course No.: VIII
Month	Course Content	Course Outcome
July	**1. Photoelectric Effect:** Introduction, Lenard's method to determine e/m for photoelectron, Richardson and Compton experiment (i) Relation between photoelectric current and retarding potential (ii) Relation between velocity of photoelectrons and the frequency of light, photoelectric cells (i)photoemissive cell (ii) photovoltaic cell (iii)Photo–conductive cell, applications of photoelectric cells	• Know main aspects of the inadequacies of classical mechanics and understand historical development of quantum mechanics and ability to discuss and interpret experiments that reveal the dual nature of matter and hence came to know the photoelectric effect • Determination of the charge of electron and e/m of electron. • Apply different photo cells for various appications
August	**2. X-rays :** Introduction, The absorption of X – rays, diffraction of x – ray , Lau's experiment, Bragg's law, Bragg X-ray spectrometer, X –ray spectra, Main feature of continuous X-ray spectrum, Characteristic X –ray spectrum	• Understands the concepts of x rays and their properties • The students acquires the necessary knowledge of diffraction of x rays along with Bragg's aw and Bragg's spectrometer • Understand continuous and characteristic X ray spectra
September	**3.Nuclear forces and models :**Introduction, Binding energy, Nuclear stability, Nuclear forces , Meson theory of nuclear forces, liquid drop model, shell model, Energy released in Fission , Chain reaction, Atom bomb, Nuclear Reactors, Nuclear fusion, Source of stellar energy.	• This chapter intended to explore the interior of nucleus and interaction between nucleons. • Students will get good theoretical basis of nuclear fission, which is the basis of atom bomb and nuclear fusion, basis of hydrogen bomb and energy production in stars. • Students also familiarize with fundamental particles

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		of nature and how these particles are interacting with each other and matter.
October	**4. Particle Accelerators and Detectors: Linear** accelerator, Cyclotron, Synchrocyclotron, Betatron, Ionization chamber, proportional counter, Geiger – Muller counter.	• Understand the principle, construction, working, limitations and advantages of various high velocity particle accelerators and particle detectors.

Pedagogy for Course Delivery:
Class Room Lectures, Demonstrations, ICT lectures including video clips, PPTs etc., assignments, tests

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Semester: IV	CLASS: B.Sc.II	SUBJECT: Physics
	Course Title: Solid State Physics	Course No.: XII
Month	Course Content	Course Outcome
Dec	**1.Crystal Structure :** Introduction, Crystal lattice- plane lattice, space lattice, translation vectors, Unit cell, (primitive,non primitive Wigner . Sietz primitive cell) Basis, symmetry operations, point groups and space groups, type of lattices (two dimensional and three dimensional lattices), lattices directions and planes , Miller indices , Inter planer spacing, simple crystal structure.	Students get brief idea about crystalline and amorphous substances, about lattice,basis, unit cell, lattice planes,miller Indices.
Jan	**2.Bonding and Band theory of solids :** Introduction, concept of inter – atomic forces, cohesive energy and types of bonding, primary bonds- (ionic bonds, covalent bond and metallic bond), secondary bonds, (Vander Walls bonds and hydrogen bonds).The Kroning - Penney model, Energy versus wave vector relationship,different representations(Brillouin zone)	• Understand the concept of cohesive energy and classification of bonds based on it. • Become able to differentiate the different bonds • Understand the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.
Feb	**3.Thermal properties of solids :** Classical theory of lattice heat capacity (Concept and comparison with experimental values), Einstein's theory of lattice heat capacity, Debye's model of lattice heat capacity, density of modes, limitations of Debye's model. **4.Free electron theory of metals and Transport properties:** Drude-Lorentz's classical theory, electrical conductivity, thermal conductivity, Wiedemann Franz law, significance of Fermi energy level, Hall effect, Hall voltage and Hall coefficient, experimental determination of Hall coefficient, Importance of Hall effect.	Detail knowledge of classical theory /Drude and Lorentz Theory of attice specific heat and its limitations Assumptions of Einstein and Debye theory of specific heat of solids along with necessary mathematics • Students will gain knowledge of basic theories of the electronic structure of materials. • Apply the free electron theory to solids to describe electronic behavior. • Fermi energy level and its

		significance • Hall effect and its importance

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Course Design: 2019-20

Semester: V	CLASS: B.Sc.III	SUBJECT: Physics
	Course Title: Electrodynamics	Course No.: XVI
Month	Course Content	Course Outcome
July	**Chapter 1. Electrostatics[12]** **Introduction :** Electric field lines , electric flux and Gauss law, the divergence of E, Curl of E, Application of Gauss law: i) Electric field due to a uniform charged sphere ii) Electric field due to charged cylinder, Gaussian pillbox, Poisson's equation, Laplace's equation, Uniqueness theorem (First and Second)	• Illustrate the physical concepts of static electric fields. • Student employs the variational approach to the solution of Poisson and Laplace equations
August	**Chapter 2. Time varying field[10]** Faraday's Law of Electromagnetic induction, Lenz's law, Self-Induction, Mutual Induction, equation of continuity, Maxwell's displacement current, Maxwell's equation (Derivation, Differential form)	• Find the significance of Faraday's law .Understands the concepts of induction and self-induction, mutual induction to solve problems using Faraday's and Lenz's laws • The students acquires the necessary knowledge for the understanding the Maxwell's four equations, their derivation and physical significance • Illustrate the concept of Displacement Current Density • Uses Maxwell equations in analyzing the electromagnetic field due to time varying charge and current distribution. • Shows the Maxwell' equations in differential and integral forms to solve various electromagnetic problems • Explains charged particle dynamics and radiation from localized time varying

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		electromagnetic sources.
September	**Chapter 3. Electromagnetic waves III[15]** Origin of electromagnetic waves, characteristics of electromagnetic wave, electromagnetic wave equations in a conducting medium, transverse nature of electromagnetic wave, plane polarized electromagnetic wave, The Poynting Vector, Poynting theorem, Polarization of Electromagnetic waves	• Comprehends the Maxwell's equations and their use with concordance with the EM waves, to understand the nature/characteristics of EM waves • Describes the nature of electromagnetic waves and its propagation through different media and interfaces. • Flow of EM energy
October	**Chapter 4. Interaction of Electromagnetic waves with matter [08]** Boundary condition for the electromagnetic field vector –**B, E, D and H** at the interface between the two media, reflection and refraction at the boundary of two non conducting media.	• Understands the behavior of B,H,E,D vectors at the boundary of two different media, Snell's law • Apply boundary conditions at various interfaces such as Dielectric-Dielectric, Dielectric-Conductor to solve electromagnetic problems • Analyzes the refection and refraction at the interface of two non conducting media

At the end of the course the student should be able to:
1. Illustrate the physical concepts of static electric fields.
2. Describe the physical concepts of static magnetic fields.
3. Apply the Maxwell equations to solve problems in electromagnetic field theory.
4. Analyze the propagation of wave in different media

Pedagogy for Course Delivery:
Class Room Lectures, Demonstrations, ICT lectures including video clips, PPTs etc., assignments, tests

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Annual Planning:- 2020-21

Semester: VI	CLASS: B.Sc.III	SUBJECT: Physics
	Course Title: Non-conventional energy sources and Optical fiber(Phy-306)	Course No.: XX
Month	**Course Content**	**Course Outcome**
Nov	**Chapter1. Non-conventional energy sources(12)**Introduction, Biomass, wind energy, tidal energy/Ocean energy, geothermal energy, biogas hydro energy, wind energy, solar energy	• After completion of this course students will be able to • Understand the different non conventional sources and the power generation techniques to generate electricity with their limitations and benefits
Dec	Biogas plant-fixed dome type **Wind energy:** Introduction to wind energy, terms and definition: wind, wind farm, wind turbine, vertical axis wind turbine (VAWT), horizontal axis wind turbine (HAWT), propeller (wheel), wind mill,types of wind turbines generator units, monoblade HAWT, twin blade HAWT, merits and limitation of wind energy.	• Design a prescribed domestic sub-systems • Recognize the need and ability to engage in lifelong learning for further developments in this field.
Jan	**Chapter 2. Solar Photovoltaic Systems:(10)** Introduction to photovoltaic systems, Solar Cell fundamentals: i) Semiconductor, ii) P-N junction, iii) Generation of electron-hole pair by photon absorption, iv) I_V characteristics of solar cell **Electrical storage:** Lead acid battery, basic battery theory	• Recognize the need of solar energy and principle behind its generation and its storage
Feb	**Chapter 3. Introduction of optical fiber(10)** Introduction, importance of optical fiber, classification of optical fiber- stepped index fiber, stepped index monomode fiber, Disadvantages of monomode fiber, plastic fiber, latest developed types of optical fibers- HPSUV; HPSIR; Halide; Tapered.	• Demonstrates an understanding of importance of optical fiber communication ,various types/ structures of optical fibers aong with their advantages and disadvantages • Compares some latest developed optical fibers

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Mar	**Chapter4. Fiber cables and fabrication(13)** **Fiber fabrication:** Classification of fiber fabrication techniques; external chemical vapour deposition (external CVD), axial vapour deposition (AVD), internal chemical vapour deposition (internal CVD) **Fiber Cables:** Construction, Strength members, cable tensile loading, minimum bend radius losses incurred during installation of cables or during subscriber service testing of cable, selection criteria, and optical cable fiber laying in telephone.	• Learns the various methods of optical fiber fabrication,Design & section parameters of optical fiber cables

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Bharatiya Shikshan Prasarak Sanstha, Ambajogai

Swa. Sawarkar Arts, Science and Commerce College, Beed

Department of Microbiology

Microbiology as an optional subject for B.Sc.

Course Outcome (CO)

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Course Outcome (CO)

On completion of the Course, students will be able to:

CO 1:

Understand the scope of Microbiology and impact of microorganisms on agriculture, environment, ecosystem, energy, and human health.

CO 2:

Describe on staining techniques, sterilization methods and role of microorganisms in in Agriculture, human and animal health, industries and food processing

CO 3:

Can operate Microbiology laboratory instruments, perform techniques for staining, observations of microorganisms, and can analyze for the presence of biomolecules.viz. Protein, carbohydrate and DNA from the sample.

CO 4:

Can describe bacterial ultra structure in detail, explore nutritional requirements of microorganism, microbial growth and various nutrient uptake system in bacteria.

CO 5:

Have thorough knowledge of biomolecules *viz.* carbohydrates, protein, lipids and nucleic acids.

CO 6:

Acquire skills of pure culture development, perform bacterial staining apply sterilization strategies.

Course, Programme Specific and Program Outcome: Department of Microbiology, Swa. Sawarkar Arts, Science and Commerce College, Bareda Mahavidyalaya Beed.

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CO 7:

Study characteristics, isolation and examination techniques for microorganisms from air, water, sewage

CO 8:

Thoroughly understand the components of immune system, their role I n immunity of a host and strategies/ techniques used for detection of either antigens or antibodies in the sample from a patient.

CO 9:

Become competent to undertake various qualitative and quantitative microbiological examinations of air, water and sewage samples.

CO 10:

Acquire skills for isolation, staining and preparation of cultivation media for pathogenic microorganisms along with antigen-antibody reactions important for diagnosis of diseases.

CO 11

Can describe microbiological examination and application in dairy, food industries especially the procedures and examination involved in the production of cheese, butter, idli, probiotics, yoghurt and curd along with mushroom as SCP

CO 12:

Acquire knowledge about diseases caused by pathogens *Staphylococcus aureus, Streptococcus pneumonie, Mycobacterium tuberculosis, Salmonella typhi, Vibrio cholerae, Treponema pallidum; viral pathogens* HIV, Hepatitis A, oncogenic virus; other pathogens such as *P. vivax, C. albicans* and Rickettsial spp. frequently involved in diseases in the society.

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CO 13:

Can perform quantitatively and qualitative examination of soil with respect to soil microbial flora specifically *Rhizobium* spp., *Azotobacter spp.* from soil. Analyze milk/ curd/ bread/ pickle and food samples qualitatively and quantitatively.

CO 14:

Handle and study bacterial pathogens *Staphylococcus aureus*, *Salmonella typhi, Vibrio. cholera and Candida albicans*. Perform haemolysinn, coagulase tests and determine antibiotic resistance of bacteria.

CO 15:

Understand molecular properties of DNA w.r.t. replication, genetic code, role in protein synthesis, gene expression, mutations and bacterial recombinations.

CO 16:

Obtain the knowledge of enzymes, metabolic pathways in microorganisms.

CO 17:

Perform experiments involving isolation of RNA, hyperchromacity of DNA, mutations in bacteria and bacterial recombination processes.

CO 18:

Perform and interpret enzymatic reactions. Study nitrate reduction, decarboxylation of amino acid and isolate photosynthetic bacteria. Undertake screening for bacteria involved in starch hydrolysis, organic acid and antibiotics.

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CO 19:

Understand aspects, procedures and applications of recombinant DNA technology.

CO 20:

Acquaint with practices in Industrial Microbiology and describe industrial fermentations of penicillin, vitamin B12, L-lysine; microbial production of ethyl alcohol and citric acid.

CO 21:

Perform experiments involving restriction digestion of lambda DNA, Isolate, separate, confirm and estimate *E. coli* chromosomal DNA. Understand ligation chain reaction. Perform DNA uptake in *E. coli* and select recombinant clones. Measure β-galactosidase activity of *E. coli*/ Yeast.

CO 22:

Produce, detect and estimate microbiological products viz. ethanol, Citric acid, alpha amylase and Identify fermentation product Lysine and Citric acid by paper chromatography and TLC. Separate proteins by agarose gel electrophoresis and undertake microbiological assay of penicillin.

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Department Of Marathi

UG PROGRAM OUTCOME

PROGRAMME OUTCOMES-BACHELOR OF ARTS(B.A.)

Student seeking admission for B.A. programme is expected to literate with following things which helps them in their future life to achieve the expected goals.

1.To know the human values.
2.Creates a sense of social services.
3.Knows responsibilities.
4.Creates critical temper.
5.Increases creative ability.
6.Creates interest in literature.
7.Availing the job opportunities in translation, transformation and media.

PROGRAMME SPECIFIC OUTCOMES-B.A. MARATHI

B.A. Students who have taken Marathi subject for degree have a lot of opportunities in the future. From a business point of view, following opportunities may be available to students.

1.The student can also work as the Directorate of Languages as an interpreter using the local Marathi language.
2.Student can also work as an Marathi news reporter.
3.Students who have taken B.A. Marathi can achieve success in MPSC, UPSC examination.
4. Students Can build their career as a translator, announcer, speaker, tutor, administrator etc.
5.After taking Marathi as a subject, students can also pursue a career in drama.
6.Students can choose their career as a writer, reviewer, interviewer, journalist etc.
7.Students can also get employment opportunities as a teacher or professors from the point of view of mother tongue.

COURSE OUTCOME IN MARATHI

1.Students will know the Marathi language.
2.Students will be able to enrich the Marathi language.
3.Students will know about different writers, stories, novels, plays, poets, autobiographies etc. Specially with reference to their writing skills, thinking way of expression, involvement with the subject issues, interpretation technique etc.
4.Students will become eligible to study the post graduation(PG Courses).

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5.It will enrich the students knowledge which will be supportive for competitive exams.
6.Students will be to use the Marathi language in day to day life.
7.Students will be aware about use of official language in application in letter writing, in communication for special purpose.
8.It will increase the communication skill in language ,use of words, vocal writing, expansion, knowledge of Marathi words etc.
9.Awareness about the old and new language, language words ,meaning of new language ,human values etc.

B.A. Ist(Marathi)

1.Explaining the nature of language and literature.
2.Imbuing the essay writing skills.
3.Understanding the interrelation between literature and society.
4.Obtaining the skills of literary criticism.
5.Illustrating the nature of literary forms like one-act-play ,travelogue and short story.

B.A. Ist(Opt.) Semester 1
Paper I (Poetic Literature)

1.Creating sensitivity in students.
2.Will develop poetic vision.
3.To be able to understand expression.
4.To consider the type of poetry and the history of poetry.
5.Developing the poetic devices and their usages.

B.A. Ist(Opt.) Semester 1
Paper II (Dramatic Literature)

1.Students will be able to know about new and old playwrights.
2.To develop interest in drama.
3.To create new plays by understanding the information about Marathi drama.
4.Students can create their career in field of acting.
5.Understanding theatrical dealings through plays on airwaves.
6.Understanding the setting of sahitya writing for other plays on television.

B.A. Ist(Opt.) Semester II
Paper III (Story Literature)

1.To create sensitivity in students.
2.Will develop story vision.
3.To be able to understand expression.
4.To consider the type of story and the history of story.
5.Students will get to know the types of stories such as Dalit ,Gramin ,Streewadi ,Aadivasi And Scientific approached stories.

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B.A. Ist(Opt.) Semester II
Paper IV (Writing Skills For Print Media)

1.To help students understand the nature and importance of the newspaper.
2.To motivate the students to write news considering what news is.
3.To develop skills in students in the field of column writing.
4.They will get to know about what to advertise and how to use it in daily life and also business.
5.The course is designed to inculcate professionalism and communication skills in the students and how they can be used in daily life.

B.A. IInd(Opt.) Semester III & IV
Paper V & VII (Aadhunik Marathi Vangmayacha Ithias 1800-1920)

1.Get to know the types of ,Marathi Vangmaya.
2.To study the socio-cultural & political background on from 1800-1920.
3.Know the brief literature in same period.
4.Know the various literary form in same period.

B.A. IInd(Opt.) Semester III
Paper VI(Druk Shravya Madhyamasathi Lekhan Kaushalya)

1.Language skills (Especially writing) are developed.
2.Understand the essence of arts.
3.Language/thought through audio-visual medium expresses them.
4.Introduces Marathi language and literature.

B.A.IInd(Opt.) Semester IV
Paper VIII(Sahitya Prakarantar Aani Sahityache Madhyamantar)

1.Can be changed in literature.
2.Various media types can be converted.
3.Turns story into a screenplay.

B.A.IIIrd(Opt) Semester V
Paper IX(Bhartiya Sahitya Vichar)

1.While studying the nature of Indian literature, the students should understand the ideology of Indian literature and its literary examples ,such as Mammata , Vishwanath, Dandi, Anandvardhan, Rudrath & Bharatmuni etc.
2.This study has been done in the journal and various literary ideas are discussed such as Rasasiddhant.
3.There was an increase in skills .To create story ,poem ,drama, essay etc.

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B.A.IIIrd(Opt.) Semester V
Paper X(Liguistics)

1.Students should know about the history of the language and what is the overall structure of the Marathi language through the senses, which words are uttered by the senses.
2.Getting acquainted with modern linguistics.
3.Understanding origin ,nature and function of language.
4.Getting Information about phonetics.
5.To improve the pronunciation of Marathi language of the students.
6.Enhancing the interest in Marathi language.
7.To inform the students about the strengths, limitations, conclusions, etc.in linguistics and how they will be used in daily life.

B.A.IIIrd(Opt.) Semester V
Paper XI(Madhyayugin Marathi Vangmayacha Ithihas-Prarambh to 1600)

1.To keep abreast of the socio-cultural and religious conditions of the Yadav period and to make the students aware of the texts that were written during that period.
2.To review the Bahamani Kaal texts by understanding the implications behind them and their actual scriptures.
3.To study the important texts of time, the authors of those texts and their texts and make an assessment about them.
4.To study the streams of Marathi literature in the middle age.

B.A.IIIrd(Opt.) Semester V & VI
Paper XII & XVI(Project work)

1.Development of reading and writing skills.
2.Development of critical vision of students .
3.Development of writing skills among students by acquiring research vision.
4.Encourage students to do linguistic study and research in the border areas and their regional specialities.

B.A.IIIrd(Opt.) Semester VI
Paper XIII(Paschatya Sahitya Vichar)

1.While studying the nature of Western literature, the students should understand the ideology of western literature and its literary examples, such as Wordsworth, Matthew, Arnold, Sigmund Freud, Colris etc.
2.Purpose of literature, production process, Introduction to various debates in literatures and approaches to critical writing to develop.
3.This study has been done in the journal and various literary ideas are discussed here such as Marxist Literary Thought, Socialist Literary Thought, Realist Literary Thought and also what is the historical and Marxist critique method in general.

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B.A.IIIrd(Opt.) Semester VI
Paper XIV(Grammar and Essays)

1.Develop reading, writing and communication skills in Marathi.
2.Apply the study of Marathi linguistics and grammar in their practical life.
3.Students should be familiar with grammar and essays in Marathi language.
4.It will help them to improve students' pronunciation as well as where grammar can be used while writing in daily life.

B.A.IIIrd(Opt.) Semester VI
Paper XV(Madhyayugin Vangamaycha Ithihas-1601 to 1818)

1.To review the social, cultural and religious condition during Shiva period- Peshwa period.
2.To study the motivations and effects of book production.
3.Comprehension of the then books-librarians-granthaspecials.
4.To comprehend the specialty Predilection of Panditi, Sahiri and Bakhar literature.

B.A.B.COM.B.SC.1ˢᵗ (SL Marathi) Semester I & II
Paper I & II(Gadya Padya Va Upayojit Marathi)

1.To introduce students to Marathi literature, language and culture.
2.Create interest in Marathi literature.
3.Cultivate ability to appreciate literature.
4.Understand various branches and movements of Marathi literature.
5.Develop linguistic skills to meet the requirements in the age of globalization.
6.Importance of language in personality development.
7.To develop skill of translation.
8.To understand socio-cultural values.
9.Practical knowledge to explain the practical application of technology.

B.A.B.SC.IInd (SL Marathi) Semester III & IV
Paper III & IV(Gadya Padya Va Upayojit Marathi)

1.To introduce standard writing practice.
2.To develop skill of translation.
3.Develop ability to appreciate and evaluate selected Biographies, Prose and Poetry in modern Marathi literature.
4.To develop the ability to look at society by developing the art of living through the study of literature.
5.To be able to understand the fairy language of business, science, office and literature.
6.To develop the ability to handle various media by identifying them.
7.Students should be introduced to the author and poet of the text included in syllabus.
8.To help understanding the social values of lessons and poetry ,democratic values, industrial experience, literary values, cultural values to help students to develop their lives.
9.Introduction of various literary texts by enhancing the reading culture . This course has been prepared for the benefit of the students and their use in life.

B.COM IInd (SL Marathi) Semester III
Paper III(Marathi Language & Commerce)

1.Devlops writing skills required for office as well as business language transactions.
2.Students are given an understanding of Marathi language in business, it will help them to do their daily business or a business in a state like Maharashtra.
3.The use of Marathi language in office and business work.
4.By studying this course, students can get subject knowledge that they can use it for future business purpose.
5.This topic complements and fundamentally helps the business through reading culture.

B.COM IInd(SL Marathi) Semester IV
Paper IV(Commercial Marathi And Business)

1.To provide understanding Marathi language in commerce.
2.To provide information on the need and the nature of use in office, Business work.
3.Giving place to Marathi language in business.
4.Complementary and basic support to business through reading culture.

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B. S. P. Sanstha's
Swa. Sawarkar College, Beed
Dept. of English
Outcome of Papers
2022-2023

1. BA II Optional English-VIII
   Outcome: The students would have developed awareness about different literatures written/translated in English.

2. B.Com II Compulsory English-IV
   Outcome: The students would emerge as good communicators.

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Sr.no	Class	Semester	Paper no.	Title of the paper	Course outcome
1.	BAFY	I	I	Shivaji and his time (1630-1707)	1. Students understood about social religious and economics situation before Shivaji Maharaj Times 2. Students follows the proud history of Shivaji Maharaj and his war
2.	BAFY	I	II	History of modern Maharashtra (1818-1905)	1.Students understand the importance of union power 2. students gained the ability to overcome adversity.
3.	BAFY	II	III	History of the Marathas (1707-1818)	1. students have been understood the work of first Bajirao Peshwa 2. Students have been now about the women status educational system and religious life in the period of Maratha
4.	BAFY	II	IV	20th century Maharashtra (1905-1960)	1. Student learned to base their views polity of justice 2. **Students organised by forgetting discrimination**
5.	BASY	III	V	History of early India (UP toB.C.300)	1.The students came together to dissolve caste and creed. 2.Students respect historical architecture and Indian culture.
6.	BASY	III	VI	History of Delhi Saltanat (1200-1526)	1. Students have known about the literacy of Delhi Saltanat. 2. Students are aware about Dynasty of Delhi Saltanat. 3. Students have been known about the Kutubminar and Hemadpanti temple structure
7.	BASY	IV	VII	History of India B.C.300-A.D.650)	1.Students honour ancient great thinkers. 2.Students have been fascinated with ancient literature.
8.	BASY	IV	VIII	History of Mughal India 1526 - 1757)	1. Students are aware about the work of Babar, Humayun,Akbar,Shahajahan and Aurangzeb. 2.Students have been known about Zamindar,Mansabdar,Jahagirdar. 3. Students have been known about the monuments like Taj mahal and Lal Killa(Red fort.)
9.	BATY	V	IX	Historiography	1.Students know history as a coordinating branch of art and science. 2.Students know the origin of modern thinking through history.
10.	BATY	V	X	History of Indian National	1.Students are keenly aware of the vision and planning of British

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Department of History ,H.O.D.

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				movement	rule had at that time. 2.Students have acquired the value of male and female equality.
11.	BATY	V	XI	History of India	1.Students understands thoughts of bramhosamaj, arya samaj and satyashodhak samaj 2.Students understand the background of today's industry development.
12.	BATY	VI	XIII	Fields of history	1.Students understand the importance and background of the Historical Museum, Archaeology Department, and Historical places. 2. Students take pride in their ancient, cultural heritage of India.
13.	BATY	VI	XIV	Landmarks in the history modern world	1.National unity has been inculcated among students. 2.Humanitarian views and constitution respect have been inculcated among the students,
14.	BATY	VI	XV	Glimpse of the history Marathwada	1.The students have embraced the thoughts of the saints. 2. Students have developed the courage to face adversity.
15.	BATY	V/VI	XII/XVI	Project Work	1. Students learned to verify the authenticity of historical evidence. 2.Due to Using modern research methods, students' confidence has increased.

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Swa. Sawarkar Mahavidyalaya, Beed
Department of Geography

Course Outcomes (CO) of the paper

Sr. No.	Class / Semester	Paper Code	Paper Title	Learning Outcomes
1	B.A.F.Y. I st Sem.	Geo-101 Paper No. I	Elements of Physical Geography	*To able identify the theories of earth origins *To Gain knowledge about earth interior *To understand the lithosphere, atmosphere and hydrosphere in relation to human being.
2	do	Geo-102 Paper No. II	Human Geography	*Able to explain the relationship between the environment and society *To able the understood various culture *To able the classify social groups
3	B.A.F.Y. II nd Sem.	Geo-103 Paper No. III	Geography of Landform	*To understand the lithosphere, atmosphere and hydrosphere in relation to human being *To understand the process of evaluation of landforms * Able to examine the cycle of erosion.
4	do	Geo104 Paper No. IV	Regional Geography of Maharashtra	*It can help us understand the regional imbalance *To understand the relationship between natural and cultural factors
5	do	Geo-105	Practical	*To able the map. interpretation *To able the relief interpretation. * Able to map enlargement ad reduction
6	B.A.S.Y. III rd Sem.	Geo-106 Paper No.VI	Climatology	*To understand the global warming *Understand the greenhouse effects. *Able to reading climate condition.
7	do	Geo-107 Paper No.VII	Population Geography	*To emphasize human environment interaction *Able to examine human activities that impact on natural resources * Able to find out population growth rate.
8	B.A.S.Y. IV th Sem.	Geo-108 Paper.No.	Oceanography	* Able to the understand interrelationship of ocean to other system. *Able to explain the how physical and chemical factors in the ocean affect the climate. * To understand the ocean resources
9	do	Geo-109 Paper No. IX	Settlement Geography	*To acquaint with spatial and structural characteristics of human settlement. *Able to describe functions of settlement

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10	do	Geo-110	Practical	*To able the measure the air temperature, air pressure etc. *To interpret the climatic condition map
11	B.A.T.Y. V th Sem.	Geo 111 Paper No.XI	Physical Geography of India	*To understand the physio-claimatic region of India. * Able to find out association between physiographic factors and cultural factors
12	do	Geo-112 Paper No.XII	Geography of Environment	*Able to conduct analysis of how environmental changes is occurred. *To understand the core geographic lexicon and basic concept environment. * Create the awareness about environment.
	do	Geo-113 Paper No.XIII	Industrial Geography of Maharashtra	*Able to evaluate the industrial development of Maharashtra. *Able to find out the barriers to industrial development
13	B.A.T.Y. VI th Sem.	Geo -114 Paper No.XIV	Agricultural Geography of India	*To understand the agriculture system of India. * To understand the influence of physical economic and technological factors on agriculture pattern
14	do	Geo-115 Paper No.XV	Geography of Natural Calamities	*To help for facing natural calamity. * A sense of being understand and and accepted. * Able to work as a volentior in rescue team.
15	do	Geo-117 paper No. XVII	Biography	*To able the contribute the environment conservation. *To able the attempts to understand interrelation between environment and man. *To preserve the biodiversity.
16	do	Geo116 Paper.No.XVI	Practical	*Able to calculate the mean,median and mode. .* Able to find out the correlation coefficient
17	do	Geo-118 Paper No.XVIII	Practical main	*Able to conduct the land survey by chain and tap , plan table.
18	do	Geo-119 Paper No.XIX	Research Project	*Able to conduct the field survey *Able to process the collected data with proper statistical method * Able to present the data by using appropriate cartographic techniques.

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Programme: - B. Sc

Department of Botany

Botany Course Outcomes

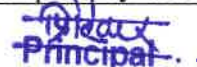## University
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

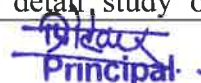| Sr. No.	Class & Semester	Paper Title & Paper No.	Course Outcomes/ Learning Outcomes
1	B. Sc I, Semester - I	Diversity of Cryptogams – I Paper No. – I (Theory)	By learning this course Diversity of Cryptogams, students are able to do the systematic study of Cryptogams such as bacteria, virus, mycoplasma, algae and fungi with reference to their Structure, Morphology, General Characters, Classification, Life Cycle and Economic importance.
2	B. Sc I, Semester	Morphology of Angiosperms Paper No. – II (Theory)	By learning this course Morphology of Angiosperms, students are able to do the systematic study and will know the Basic body plan of flowering plant, modular type or growth, diversity of plant morphology of vegetative organs, Root, Stem, Leaf, Inflorescence, Flower structure, Fruit study in detail and economic importance of angiosperm plants.
3	B. Sc I, Semester	Practical Based on Paper I & II Paper No. - III	By learning this course observation Skill, to sketch the diagrams, section cutting, temporary slide preparation techniques and uses of different microscope for study develops. Students observes the plants and will try to classify them on the basis of their some characters and will try to knows the structural forms of cryptogams and morphology of angiosperms
4	B. Sc I, Semester - II	Diversity of Cryptogams – II Paper No. – IV (Theory)	By learning this course Diversity of Cryptogams, students are able to do the systematic study of Cryptogams such as bryophytes and pteridophytes with reference to their Structure, Morphology, General Characters, Classification, Life Cycle and Economic importance.
5	B. Sc I, Semester - II	Histology. Anatomy and Embryology Paper No. - V	By learning this course histology anatomy and embryology students are able to do the histology, anatomy and embryology of angiosperms plants.
6	B. Sc I, Semester - II	Practical's Based on Paper No. IV & V	By learning this course observation Skill, to sketch the diagrams section cutting,

		Paper No. - VI	temporary slide preparation, permanent slide preparation, double staining technique techniques and uses of different microscope for study develops. It will develop section cutting skill, observation skill, sketching skill.
7	B. Sc -II, Semester - III	Taxonomy of Angiosperms Paper No. - VII	By learning this course Taxonomy of Angiosperms, students are able to do the systematic study of Angiosperms with reference to their Structure, Salient features, origin and evolution Systems of classification –Introduction of Natural, Artificial and Phylogenetic Bentham and Hooker's system of classification up to series level, its merits and demerits. Taxonomy in relation to Anatomy, Embryology, Palynology, Ecology and Cytology. Concept of Binomial Nomenclature and its advantages. Concept of genus, species and epithet, Herbaria, and economic importance of angiosperms.
8	B. Sc -II, Semester - III	Plant Ecology Paper No. - VIII	By learning this course Plant Ecology students are able to know the relation between plant and environment with respect to the climatic factors such light, temperature and water. Edaphic factors and soil related information. Response of plant to the water. phytogeography, community ecology and ecosystem.
9	B. Sc -II, Semester - III	Practical based on paper no. VII Paper No. - IX	By learning this course observation Skill, to sketch the diagrams, uses of different microscope for study develops. It will develop observation skill, sketching skill and the learner will became able to classify the plants up to genus and species level.
10	B. Sc -II, Semester - III	Practical based on paper no. VIII Paper No. - X	By learning this course Plant Ecology students are able to study morphological and anatomical adaptations in hydrophytes, xerophytes, halophytes and epiphytes. Study of vegetation by using quadrat method. Estimation of Importance Value Index (IVI) of grassland ecosystem. Determination of water holding capacity of different soils. Study of meteorological instruments -Rain gauge, Hygrometer, Barometer. Determination of percent leaf area injury of different infected leaf samples. Estimation of salinity of water samples. Determination of pH of different soils by pH papers/universal indicator/pH meter.
11	B. Sc -II,	Gymnosperms and utilization	By learning this course Gymnosperms and

	Semester -IV	of plants Paper No. - XI	utilization of plants, students/ learners are able to do the detail study of gymnosperms with reference to their Structure, morphology, Salient features, classification and reproduction. Salient features, classification as per Sporne 1965 and economic importance of gymnosperms. Geological time scale, fossilization, types of fossils and fossil fuels. Contributions of Prof. Birbal Sahani. Study of morphology, anatomy, reproduction and graphical representation of life cycle of Cycas, Pinus and Gnetum. Utilization of plants domestication of plants and their centers of origin. History, origin, cultivation, harvesting, improved varieties and economic importance of Food plants, Sugar, Fibers, Vegetable oils, Beverages, Mushroom, Botanical name, family name and economic importance of the Medicinal plants, Timber and Gum, Cosmetics and Perfumes and Spices.
12	B. Sc -II, Semester - IV	Plant physiology Paper No. - XII	By learning this course Plant Physiology, students/ learners are able to do the detail study of plant physiology with reference to Plant water relations: Diffusion, osmosis, plasmolysis and imbibition. Water absorption and ascent of sap. Transpiration, structure of stomata, mechanism of opening and closing of stomata Mineral nutrition: Macro and microelements: roles and deficiency symptoms of N, P, K, Mg, Ca, Fe, Zn, Bo, Mo. Mineral uptake – passive. active. Translocation of solutes: Mass flow hypothesis, protoplasmic streaming theory, Source and sink relationship. Enzymes, Growth, Growth regulators, Photosynthesis and Respiration.
13	B. Sc -II, Semester - IV	Practical based on paper- XI Paper No. - XIII	By learning this course Gymnosperm and utilization of plants, students/ learners are able to do the detail practical study of gymnosperms and utilization of plants with reference to detail study of Cycas, Pinus and Gnetum, Section cutting skill, Permanent slide preparation. Paleobotany: Types of fossils (Specimens study). Utilization of plants: Food plants, histochemical tests of food storing tissue in Jowar & Wheat. Histochemical test of lignin and cellulose. Cultivation of Oyster, hand section of Groundnut & Sunflower Seed and staining of oil droplets by Sudan III. Study

			of the sources of Timber, Gum, Medicinal plants, Cosmotics and Perfumes. Study of Black pepper, Clove, Cinnamon, Cumin, Coriander.
14	B. Sc -II, Semester - IV	Practical based on paper- XII Paper No. - XIV	By learning this course Plant Physiology, students/ learners are able to do the detail practical study of physiological aspects of plants with reference to the experiments Osmosis by egg membrane and potato osmoscope. Plasmolysis in Tradescantia leaves. Effect of different concentrations of organic solvents on membrane permeability. Determination of water potential of any tuber. Detection of mineral elements in plant ash. Digestion of starch by amylase. Detection of enzyme activity: oxidase, peroxidase, catalase and dehydrogenase. Separation of chloroplast pigments by paper chromatography. Demonstration of Hill reaction. Effect of different intensities of light on photosynthesis. Effect of different colors of light on photosynthesis. Fermentation by Kuhnes fermentation vessel. Isolation of starch. Isolation of pectin. Estimation of total and reducing sugars in fruit juice by Fehling solution. Separation of amino acids by paper chromatography. Effect of IAA and Gibberellins on seed germination.
15	B. Sc III Semester - V	Cell Biology and Molecular Biology Paper No. - XV	By learning this course Cell Biology and Molecular Biology, students/ learners are able to do the detail study of cell and molecular biology and becomes familiar with reference to the Cell, Structure of Prokaryotic cell (Bacterial cell) and Eukaryotic cell (plant cell), Cell wall and cell organelles, Golgi complex, Endoplasmic reticulum and Lysosomes. Nucleus, Cell division, Cell cycle -G1 phase, S phase, G2 phase and M phase, Mitosis, Meiosis and significance of mitosis and meiosis. Nucleic acids DNA, Watson and Crick's model, Z - DNA, B - DNA, functions of DNA, Replications of DNA and RNA. Chromosome, Giant Chromosomes- Polytene and Lampbrush Chromosome and Chromosomal aberrations - structural and numerical. Students will become familiar about the cell and molecular biology.
16	B. Sc III Semester - V	Diversity of Angiosperms – I Paper No- XVI (A)	By learning this course Cell Biology and Molecular Biology, students/ learners are able to do the detail study of cell and

			molecular biology and becomes familiar with reference to the Plant (Angiosperm) Biodiversity Definition, concept, origin and evolution, Types of biodiversity, Species, genetic, ecological, cropland and agricultural diversity, biodiversity in India, endemism and hot spots, threatened species, threats to biodiversity, Conservation of biodiversity, Major causes for loss of biodiversity, listing of threatened biodiversity. Threatened categories extinct, endangered, vulnerable, rare and indeterminate. Conservation measures: – ex-situ, and in-situ; biodiversity conservation in India. Phytotaxonomy - Classification of Angiosperms with special reference to Linnaeus, A. P. de Candole, Bentham and Hooker. Study of diversity of families - Magnoliaceae, Nymphaeaceae, Papveraceae, Brassicaceae, Capparidaceae, Rutaceae, Rhamnaceae, Combretaceae, Lythraceae, Cucurbitaceae and Apiaceae.
17	B. Sc III Semester - V	Practical based on XV Paper No- XVII	By learning this practical course Cell Biology and Molecular Biology, students/ learners are able to do the detail study of cell and molecular biology. Learner will become able to study the cell structure and adopts cytological preparation technique. Students become familiar with the electron micrographs of cell organelles. Knows slide preparation technique for mitosis and meiosis. Students will prepare idiogram from the given micrograph of karyotype. Will do study of giant chromosomes in Chironomous larvae. Model preparation skill develops in to the students. Study of chromosomes, DNA and RNA becomes easier.
18	B. Sc III Semester - V	Practical Based on XVI – I (A) Paper No. - XVIII	By learning this practical course Diversity of Angiosperms – I, students/ learners are able to do the detail study of Angiosperms. Learner will become able to study the herbarium preparation technique, study of analytical characters of plants. Students will prepare their own kkkkeys for angiosperm classification. Students will do the study of families Magnoliaceae, Nymphaeceae, Papaveraceae, Brassicaceae, Capparidaceae, Rutaceae, Rhamnaceae, Combretaceae, Lythraceae, Cucurbitaceae

			and Apiaceae. Pollen grain mounting skill develops.
19	B. Sc III Semester - VI	Genetics and Biotechnology Paper No. - XIX	By learning this course Genetics and Biotechnology, students/ learners are able to do the detail study of genetics and biotechnology. Students will know the Mendelism, Interaction of genes, allelic gene interaction and nonallelic gene interaction. Students will know sex determination, mechanism of sex determination and sex determination in plants. Students will study the sex linked inheritance, fine structure of gene, one gene one enzyme hypothesis and genes related diseases and detection of genetics diseases.
20	B. Sc III Semester - VI	Diversity of Angiosperms – II Paper No. – XX (A)	By learning this course Diversity of Angiosperms - II, students/ learners are able to do the detail study of angiosperms. Students will know the Plant identification: keys, herbaria and botanical gardens, Origin of angiosperms: origin and evolution, Bennettitalean, Ranalian and Caytonial theory, Binomial nomenclature: Principles and rules. Students will also know the modern trends in taxonomy such as Cytotaxonomy, chemotaxonomy, and numerical taxonomy. Study of pytotaxonomy with reference to Engler & Plantle, Hutchinson, Takthajan system of classificationand will do the systematic study of diversity of following families Asclepiadaceae, Scrophulariaceae, Oleaceae, Convolvulaceae, Verbenaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae, Liliaceae and Commelinaceae.
21	B. Sc III Semester - VI	Practical based on paper No. – XIX Paper No. - XXI	By learning this practical course Genetics and Biotechnology, students/ learners are able to do the detail study of genetics and biotechnology. Students will prepare the quiz on genetics and biotechnology and subsequently will solve it. Students will work out laws of inheritance by using seed mixtures. Solves Problems based on gene interaction and sex linked inheritance.
22	B. Sc III Semester - VI	Practical based on paper No. – XX (A) Paper No. - XXII	By learning this practical course Diversity of Angiosperms - II, students/ learners are able to do the detail study of angiosperms. Students will know the Plant identification: keys, herbaria and botanical gardens, Students will do study of

			pytotaxonomy with reference to Engler & Plantle, Hutchinson, Takthajan system of classification and will do the systematic study and observation of diversity of following families Asclepiadaceae, Scrophulariaceae, Oleaceae, Convolvulaceae, Verbenaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae, Liliaceae and Commelinaceae.

Prof. Uttam S. Salve
Head Department of Botany
B. S. P. S. Ambajogais
Swa. Sawarkar Mahavidyalalya, Beed

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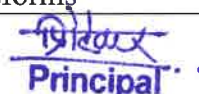Swa.Sawarkar Mahavidyalaya

Sr. No.	Class / Semester	Paper Code	Paper Title	Course Outcomes
1	B.Sc.I yr	MAT-101	Differential Calculus	- Student can easily differ between hyperbolic and inverse hyperbolic function. - They can able to solve examples related to Differential Calculus - They should understand the rules of differentiation. they should be competent at computing the derivatives of given functions; this implies they should know the derivatives of the elementary functions. - They can better understand difference between Rolle's LMVT & CMVT - Student can able to solve examples depend upon partial differential equations - They can better understand difference between curl , gradient and divergence of scalar and vector point function
2	B.Sc.Iyr	MAT-102	Differential Equations	After completion of this course, students are able to understand: - difference between order and degree of differential equation - Learn to solve differential equations with constant and variable coefficients Differentiate function of two or more variables - Able to solve ODE & PDE examples with more than two variables.
3	B.Sc.Iyr	MAT-201	Integral Calculus	After completion of this course, students are able to understand: - Solve higher order trigonometric function by use in reduction formulae. - Student can able to find it out the length of path of curve .

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				➢ Able to find the area of plane region . Difference between Surface ,line ,volume integrals
4	B.Sc.Iyr	MAT-202	Geometry	After completion of this course, students are able to understand: ➢ Three dimensional geometry. ➢ Learn to solve problems related to plane right line sphere, cone, cylinder and conicoid ➢ Right circular cone & cylinder ➢ Central conicoid .
5	B.Sc.IIyr	MAT-301	Number theory	After completion of this course, students are able to understand : ➢ Divisibility Theory in the integers: ➢ The Division Algorithm, The greatest common divisor, The Euclidean algorithm, The Diophantine equation $ax + by = c$. ➢ Primes and their Distribution ➢ The Fundamental Theorem of Arithmetic ➢ The theory of Congruences: ➢ Basic Properties of congruences, Linear congruences ➢ Fermat's Theorem ➢ Fermat's Factorization Theorem, The little Theorem, Wilson's Theorem. ➢ Number-Theoretic Functions: ➢ The functions τ and σ, The Mobius inversion formula ➢ Euler's Generalization of Fermat's Theorem: ➢ Euler's Phi-function, Euler's Theorem, Some properties of the Phi-function
6	B.Sc.IIyr	MAT-302	Integral Transform	After completion of this course, students are able to understand: ➢ Beta and gamma function. ➢ Application of differential equations ➢ Laplace Transforms, Fourier Transforms

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7	B.Sc IIyr	MAT-303	Mechanics-I	After completion of this course,: ➤ Student can able to solve some applied mathematics problems with different physical situation. ➤ Forces acting on a particle: ➤ Equilibrium of forces acting on a particle: ➤ Triangle law of forces, Converse of the triangle law of forces, Polygon of forces, Lami's theorem, Conditions of equilibrium of forces acting on a particle. ➤ Forces acting on a Rigid Body: ➤ Introduction, Moment of a force, Sum of vector moments of two like parallel forces, Couples, Conditions of equilibrium of forces acting on a rigid body, Trigonometrical Theorems. ➤ Centre of Gravity: Centroid of weighted points, Centre of gravity, Centre of gravity of some uniform bodies
8	B.Sc.IIyr	MAT-401	Numerical Methods.	After completion of this course, students are able to understand: ➤ Solution of algebraic and transcendental equations. ➤ Interpolation. ➤ Curve fitting & Approximation. ➤ Understand different Numerical Methods and numerical techniques to solve ordinary differential equations
9	B.Sc.IIyr	MAT-402	Partial differential equations.	After completion of this course, students are able to understand: ➤ Learn to solve Partial differential equations of order one ➤ Nonlinear Partial differential equations of order one . ➤ Linear Partial differential equations. Partial differential equations having order two
10	B.Sc.IIyr	MAT-403	Mechanics-II	After completion of this course, students are able to understand: ➤ problems related to Kinematics and dynamic of particles ➤ Kinematics and dynamics of a particle in two dimensions: ➤ Tangential and normal components of velocity and acceleration, Angular speed and angular velocity, Radial and transverse components of velocity and

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				acceleration, Areal speed and areal velocity. ➤ Kinetics of a particle: ➤ Newton's law of motion, Matter, Linear momentum, Angular momentum, An Impulsive force and its impulse, Conservation of linear momentum, Impact of two bodies, Work, Energy, Scalar point function, Vector point function, Field of force, Conservative field of force. ➤ Motion of a projectile and motion in a resisting medium: ➤ Rectilinear Motion, Motion under gravity, Projectile, Motion of projectile, Range on an inclined plane, Parabola of Safety, Projectile to pass through a given point, Motion in a resisting medium, Motion of a body moving under gravity and in a medium whose resistance varies as velocity. ➤ Centre of Gravity: Areal velocity in central orbit, Differential equation of central orbit, Apses, Law of force, Pedal equation of some curves
11	B.Sc.IIIyr	MAT-501	Real Analysis-I	After completion of this course, students are able to understand: ➤ Understand different Sequences (Bounded, divergent, convergent, Monotone, Cauchy) and learn to solve Problems related to the same. ➤ Sequences of real Numbers: Limit of a sequence, Convergent sequence, Divergent Sequence, Bounded sequences, Monotone Sequences, Operations on Convergent Sequences, Operations on divergent sequences, Limit superior and limit inferior, Cauchy Sequences ➤ Series of Real Numbers: Convergence and divergence, Series with non-negative terms, Alternating series, Conditional convergence and absolute convergence .
12	B.Sc.IIIyr	MAT-502	Abstract Algebra-I	After completion of this course, students are able to understand: ➤ Set Theory ➤ Mappings, The integers

				➤ Group Theory: Definition of a Group, Some examples of Groups, Some preliminary lemmas, Subgroups, Normal subgroups and Quotient groups, Homomorphisms, Automorphisms, Another Counting Principle. ➤ Ring Theory: Definition and Examples of Rings, Some Special classes of Rings, Homomorphisms, Ideals and Quotient Rings, More Ideals and Quotient Rings, Polynomial Rings
13	B.Sc.IIIyr	MAT-504	O.D.E..-I	After completion of this course, students are able to understand: ➤ Complex number. ➤ Linear equation of the first order. Linear equation with constant coefficient
14	B.Sc.IIIyr	MAT-601	Real Analysis-II	After completion of this course er , students are able to: ➤ Understand Properties of Riemann Integrals and Problems related to the same ➤ Understand a Concept of Metric Spaces ➤ Limits in Metric Spaces ➤ Metric spaces, Limits in Metric spaces ➤ Continuous functions on Metric Spaces: ➤ Functions continuous on metric spaces, Open sets, Closed sets ➤ Connectedness, Completeness and Compactness: ➤ More about open sets, Connected sets, Bounded sets and Totally bounded sets, Complete metric spaces, Compact metric spaces, continuous functions on compact metric spaces, Uniform continuity ➤ Calculus Sets of measure zero, Definition of the Riemann Integral, Existence of the Riemann integral, Properties of the Riemann Integral, Fundamental Theorem of Calculus
15	B.Sc.IIIyr	MAT-602	Abstract Algebra-II	After completion of this course, students are able to understand: ➤ Vector Spaces and Modules: Elementary Basic concepts, Linear Independence and Bases, Modules ➤ Dual space

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				> Inner product space
16	**B.Sc.IIIyr**	**MAT-604**	**O.D.E.- II**	After completion of this course, students are able to understand: > Linear equation with variable coefficient. > Wronskian. > Homogeneous equations > Linear equation with regular singular point.

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Department of --Philosophy

Course Outcomes(CO) of the paper

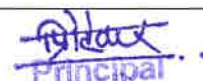| Sr. No.	Class / Semester	Paper Code	Paper Title	Course Outcomes
1	BA F Y 1 semester		Ethics ,Geanral psychology Apled Ethics Social psychology	Demonstrate understanding of major ethical theories and problems in the western tradition thought written and oral discussion
2	BASY 3 l4 semester		Inductive Logic Western philosophy Research methodology	Asses argument and philosophical perspective using critical reasoning 1)apply knowledge of ethical perspective theories and critical reasong to develop his or her own opinion regards philosophical problem and issues
3	BATY 5 and 6 seamesr		1)Historyof Indian philosophy 2)propositional Logic 3) modern philosophical trend 4) symbolic Logic 5) Indian philosophy 6) Exaetealisim	1) analytical out looking this ability develop though proper study of analytic philosophy it helps to from the capacity to analyze various situations in life 2)Logical and critical attitude : study of logic helps to think logically and critical the student can argue and evaluate in a constructive way 3) Ethical thinking : the course introduced the moral concept of good and bad, right and wrong it helps to from strong foundation of character and personality 4) proper understanding of any kind of situation though logical and rational thinking 5) proper realize of the natur of life and society

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Department of Zoology
Course Outcomes

Dr. R. M. Dhere

Sr. No.	Class / Semester	Paper Code	Paper Title	Course Outcomes
1	B.Sc. F.Y Semester First	ZOL-101	Animal Diversity -I Protozoa To Echinodermata	On completion of the course the students will be able to understand the general organization, diversity and adaptation of Non Chordates. The Student will learn the importance of biodiversity conservation.
2	B.Sc. F.Y Semester First	ZOL-102	Cell Biology	The student will understand the architecture and functions of cell. Students would be able to prepare temporary squash preparations of onion root tips for mitosis.
3	B.Sc. F.Y Semester First	ZOL-103	Practical Paper based on Paper 101 & 102	Ability to understand the anatomical organization of organs and systems in representative species. Ability to identify and describe structure and functions of different body parts of Invertebrates. Students would be able to prepare temporary and permanent mountings of biologicalmaterial.
4	B.Sc. F.Y Semester Second	ZOL-105	Animal Diversity-II (Protochordata to Mammals)	On completion of the course the student should be able to know the General organization of Chordates as a group and know the taxonomy and characteristic features of the various Chordate phyla.
5	B.Sc. F.Y Semester Second	ZOL-106	Genetics	The student will understand genetics and heredity. Acquire knowledge of Mendelian Genetics and its Extension.
6	B.Sc. F.Y Semester Second	ZOL-107	Practical Paper based on Paper 105& 106	Ability for mounting of salivary glands of Drosophila larvae.
7	B.Sc. S.Y Semester Third	ZOL-301	Paper – VII Vertebrate Zoology	The student will be able to identify and understand comparative anatomical structure of vertebrate organ systems. The learner will be able to understand the evolution of various organs and systems in the vertebrate body according to its environment.
8	B.Sc. S.Y Semester Third	ZOL-302	Paper – VIII Genetics- II	Graduates will be able to explain and interpret various processes, phenomena, states and evolutionary tendencies at a biological system level. Understand the Recombinant DNA Technology. Students are able to understand the outline of Genetic Engineering. Ability to Learn the role of Genetic Engineering in biology.
9	B.Sc. S.Y Semester Third	ZOL-303	Paper – IX Practical based upon Paper VII	Students able to improve the skills in microscopy, slide preparation, observations, drawings and laboratory techniques. To acquaint the students with operations of the different laboratory equipment.
10	B.Sc. S.Y Semester Third	ZOL-304	Paper – X Practical based upon Paper VIII	Demonstrate the genetic traits in Man. Understand the organization and functions of genetic material in the living world.

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11	B.Sc. S.Y Semester Fourth	ZOL-401	Paper – XI Animal Physiology (Special Emphasis on Mammals)	Understand function and types of heart & circulatory system. Appreciate the basic function of kidney, main function of nerves. Understand the structure, development and function of reproductive organs in human.
12	B.Sc. S.Y Semester Fourth	ZOL-402	Paper – XII Biochemistry & Endocrinology	Understand the chemical structure and functions of various biomolecules. . Learn the signaling of biomolecules in cell membrane. . Understand the correlation between metabolism of different types of biomolecules. Acquire knowledge on the nature and functions of hormones and learn the mechanism of hormone action. Learn the structure and functions of Endocrine glands.
13	B.Sc. S.Y Semester Fourth	ZOL-403	Paper – XIII Practical based upon Paper XI	. Ability to Understand the estimation of blood cell counts, Haemoglobin content in humans. To acquaint the students with operation of clinical procedures for blood & urine analysis.
14	B.Sc. S.Y Semester Fourth	ZOL-404	Paper – XIV Practical based upon Paper XII	Ability to understand the detection of blood groups of humans. To acquaint the students with operation of clinical procedures for blood analysis.
15	B.Sc. T.Y Semester Fifth	ZOL-501	Paper XV Ecology	Demonstrate knowledge of biotic and abiotic interactions. Express understanding of environmental issues, and inter-relation between different components of an ecosystems. Ability to elaborate about distribution and abundance of organisms. Apply different experimental techniques to study any ecosystem or its components. Describe the relation between structure and function species in environment.
16	B.Sc. T.Y Semester Fifth	ZOL-502	Paper XVI Fishery Science I	Describe different food fish species and their capture methods used in India. Ability to identify and describe fish of capture and culture food fish. Understand the Riverine, Estuarine and Reservoir fisheries.
17	B.Sc. T.Y Semester Fifth	ZOL-503	Paper XVII Practical based on paper XV	Knowledge of the structure and function of earth's ecosystem. An understanding of different types of ecosystems and biodiversity. An ability to classify biodiversity and identify threats to biodiversity. An understanding of human influence on biodiversity. Knowledge of modern tools and technique for study and conservation of ecosystem and wildlife.
18	B.Sc. T.Y Semester Fifth	ZOL-504	Paper XVIII Practical based on paper XVI	Ability to identify and describe fish of capture and culture food fish. To acquaint the students with major fisheries resources and their present status and utilization
19	B.Sc. T.Y Semester Sixth	ZOL-601	Paper XIX Evolution	Understand the theories and concepts of evolution. Learn the process of evolution in animals. Understand the patterns of evolutionary changes in animals.
20	B.Sc. T.Y Semester Sixth	ZOL-602	Paper XX Fishery Science II	Ability and skill to design and construct a fish farm. Skill to describe and undertake different methods of fish breeding. Elaborate about different fishing craft and gear used in Indian capture fishery. Knowledge of fish diseases and skill to treat sick fish with appropriate techniques.
21	B.Sc. S.Y Semester Sixth	ZOL-603	Paper XXI Practical based on paper XIX	Graduates will be able to explain and interpret various processes, phenomena, states and evolutionary tendencies at a biological system level.
22	B.Sc. T.Y Semester Sixth	ZOL-604	Paper XXII Practical based on paper XX	Perform fish farm practices, farm management, fish breeding & rearing. Adopt appropriate fish preservation and processing techniques for fish by-products.

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** SOCIOLOGY DEPARTMENT. **

** SOCIOLOGY OUTCOME **

(*1) – provide instruction to enable students to understand human behaviour within a social context.

(2) help students achieve, competence in understanding critically assessing and using major sociological concepts.

(3) make students knowledgeable consumers and producers of research applicable to social problem or iissues.

(4) introduce students to the , varied, theoretical prospectives of sociology.

(5) student should be able to demonstrate an understanding, of human behaver within social context.

(6) student can analyse human behaviour within associal context, from different perspectivas.

(7) to develop compentancy in understanding critically assign and using major sociological concept.

(8) student will be able to define major sociological concept in valid in understanding social behaviour interaction to organisation and apply major sociological concept to specific situations.

(9) student will be able to use the concept to organise and make sensors of hot they find in specific solutions and use specific solutions to examply and critique, major sociological concept.

(10) student will be able to understand the basic concept of research.

(11) student will be able to think and make an inquire into the socio economic and political problems.

** SOCIOLOGY B. A. **
BA. I year.

BAS 01

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INTRODUCTION TO SOCIOLOGY

, 1 student will now the basic concept of sociology.

2 . Student will now the significance of the study of the sociology.

3 . Student will be aware about the content and scope of the subject.

BAS 02

INDIVIDUAL AND SOCIETY.

1 . Student will now about reciprocal relationship between man and Society.

2 student will get information about various social values noms and traditions.

3 student will study the philosophy of different religion and compare and contrast.

BAS. 03

INTRODUCTION TO SUBFIELDS OF THE SOCIOLOGY.

1 student gets information about the rural Urban and tribal sociology.

2 student will now about the political sociology psychology Anthropology and Industrial Sociology.

3 student we study about various social culture.

BAS. 04

INDIAN SOCIAL COMPOSITION.

1 student will now about the futures of Indian society.

2 student will be acquainted with the forms of diversity in India.

3 students will familiarize with the concept of democracy and secularism.

BA. II YEARS.

BAS. 05

PROBLEMS OF RURAL INDIA.

1 student will get information about the problems and issue of Indian women.

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2 student will get information about the rural education and health problem.

3 student will study of rural economy.

BAS. 06

CONTEMPORARY URBAN ISSUES.

1 student will now the process of urbanization.

2 student will be aware about the problems of migration.

3 student will now the effects of globalisation on urban society.

BAS. 07

POPULATION IN INDIA.

1 students will be aware about the issues regarding population.

2 student will get information about the effects of population growth on environment.

3 student will now about the India's Population Policy.

BAS. 08

SOCIOLOGY OF DEVELOPMENT.

1 student will be aware about the social development issue.

2 student will get information about problems of welar sections.

3 student will get information about the different government scheme.

BA III YEAR

BAS. 09

SOCIOLOGICAL TRADITIONS.

1 students will now about the different social theories and thoughts.

2 students will get the information about thoughts of social thinker.

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3 students will be able to express their thoughts and ideas regarding the various sociological traditions.

BAS. 10

INTRODUCTION TO RESEARCH METHODOLOGY.

1 students will be able to understand the basic concept of research

2 they will be able to reconding and acquire modern trends in social research

.
3 the avernesses will be created among the student about the latest and scientific techniques of research.

BAS 11

SOCIAL PROBLEMS IN CONTEMPORARY INDIA.

1 student will come across various social problem and issue and develop their critical thinking.

2 student will now the challenges recognises and and thereats in front of the Indian society and will try to put some solutions for them.

3 students with study about the problems of displacement and rehabilitation.

BAS 13

SOCIOLOGICAL THEORIES.

1 student will understand the contribution in sociology of the Western thinkers

2 student will be Familiarizead with Basic concept generated by the Western sociological thinkers.

3 student will get inclulcated by the thoughts of sociological thinkers.

BAS 14

SOCIAL RESEARCH METHODS.

1 student will be able to understand the basic concept research.

2 they will be able to recognize, and acquire, modern trends in social research.

3 the other naishes will be created among the students about the latest and scientific techniques of research.

BAS 15

SOCIAL DISORGNANIZATION IN CONTEMPORARY INDIA.

1 student will be aware about the problems of terrorism naxalism Highlands against women and regionalism and develop their critical thinking to put some solution of the same problems.

2 student will be able to analyse of regional imbalance.

3 student will get information about the concept and issue of social disorganization in contemporary India.

BAS 15

PROJECT.

1 students study at their one by selecting topic related to contemporary social issue.

2 student will be able to understand the basic concept of research methodology.

3 the awarenesses will be created among the students about the latest and scientific techniques of research.

4 students will be able to write a projector report in scientific manner.

STUDENT LEARNING OUTCOME

UPON COMPILATION OF B.A. IN SOCIOLOGY., STUDENTS WILL.

1 think critically about the cases and consciousness of social inquality.

2 desi and evilate empirical sociological research.

3 explain and apply the major , theoretical perspectives in, sociology.

4 communicate orally and in writing about sociological concept.

5 use their sociological education outside of the undergraduate classroom particularly in their careers of future education

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DEPARTMENT ECONOMICS

COURSE OUTCOMES

Course Outcomes:

Department of Economics , so said Alfred Marshall, is the study of mankind in the ordinary business of life. Not surprisingly, the discipline of Economics emerged to understand the changes happening in the 18th Century Western Society following the Industrial Revolution, as explained in the seminal writings of Adam Smith in his book, The Wealth of Nations. Economics is a social science- it studies human behavior. Customary to all disciplines, it has its unique concepts and way of thinking. However, it also requires an understanding of Mathematics, Statistics, Commerce, Political Science, Philosophy, Sociology, Psychology, Law, History and Management. Thus, economics is a diverse field. The important areas of Economics are Industrial Organization, Economic Development, Econometrics, Finance, Labour Economics, Law and Economics, Public Economics, Environmental Economics, and History of Economic Thought. A study of economics makes a person an informed and rational citizen. Briefly,

Following are the learning outcomes of economics:

1. The Language and Method of Economics Students will learn economic terms and concepts that impact our daily lives and appear in popular press. Some of these examples are scarcity, trade-offs, opportunity costs, markets, economy,

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specialization, monopolistic behaviour, monetary and fiscal policies, stock market trading, bank performance, inflation and so on. Students will also learn about the method of how economics- how economists think and how they make theories to understand and solve human issues.

2. Different Economic Systems and Schools Students learn that there are differing views for solving economic problems. So, there are different schools for solving varying problems in Economics. Example, governments and markets are competing systems for providing goods and services to people. Similarly, Classicals and Keynesians are the differing schools of thought in Macroeconomics.

3. Analytical Reasoning and Data Analysis Students will learn to identify, compile, interpret and analyse quantitative economic data using econometric methods like mean, median, mode and advanced regression analysis to assess economic relationships. This will be done through softwares like Stata, EViews, Nlogit, SAS. They will also learn analytical techniques like optimization, equilibrium, comparative statics, economic incentives and so on to solve economic problems through diagrams, equations and explanations.

4. Understand functioning of important institutions The course also explains the functioning of important institutions in India like Reserve Bank of India and Ministry of Finance (and also abroad) that shape monetary and fiscal policies. These policies address important issues like unemployment, inflation, economic growth, balance of payment and the like. This will also help students to understand historical and daily economic issues as appearing in popular press and reports issued by above institutions.

5. Public policy analysis Through economic tools at microeconomic and macroeconomic level, students will able to understand the impact of government policies relating to taxation, price controls, subsidies, innovation and intellectual property, labour laws, efficiency and so on. 6. Research, Writing and Presentation

skills Students will learn to frame an economic question of public significance and learn to evaluate it using an appropriate research method. This involves methodology, literature survey, data collection, use of appropriate theory and econometric methods and presentation of results. Equipped with these skills, a graduate student can progress to a diverse range of fields such as higher education, public policy analysis, stock market trading, media, corporate finance and banking, law, government services, environmental analysis and so on. Economics students are amongst the highest paid amongst all graduates.

A detailed description of the courses allotted under this Department are as follows:

1. Introductory Microeconomics (Semester I) The course exposes students to the basic principles of microeconomic theory. It emphasises how economists think, how consumers and firms make decisions and interact in output and input markets, and how different market structures operate. The course also illustrates the practical use of these concepts to real life situations. The course requires a knowledge of mathematics at 12th level. Key topics are scope and method of economics, functioning of markets, government policies relating to taxation, price ceiling and price floors, market efficiency, household decision making, firm behaviour, perfect competition and monopoly and land and labour markets.

2. Introductory Macroeconomics (Semester I) The course exposes students to the basic concepts of macroeconomic theory. Macroeconomics studies economies as a whole. It looks into issues like why are some countries richer and grow faster than others, why do some countries have high inflation and what are its consequences, how do fluctuating exchange rates impact a country, why do all countries experience recessions and expansions, how are monetary and fiscal policies formulated and how they impact an economy and the like. Key topics in this course are: Introduction to macroeconomics and national income accounting

(measurement of GDP and other aggregates); Money -what it is, how is it created, tools of monetary policy; Inflation- Meaning and costs of inflation, hyperinflation; and the closed economy in the short run- Classical and Keynesian Systems, IS-LM model, fiscal and monetary policy multipliers.

3. Indian Economy-I and II (Semester III and IV) The course on Indian Economy examines issues relating to the evolution and performance on all aspects of the Indian economy. It is based on the concepts of development economics. The course is fairly exhaustive and is useful for increasing the general awareness of students on issues affecting the Indian Economy. The course is spread over two semesters.

Indian Economy I: India's economic development since independence; Population and Economic Development in India; Growth and Distributional issues (poverty, inequality and unemployment); and International Comparisons (India with other countries).

Indian Economy II: Macroeconomic Policies and their impact (Fiscal Policy, Financial and Monetary Policies, Trade and Investment Policy and Labour Regulation); Policies and Performance in Agriculture; Policies and performance in Industry; and Trends and performance in Services.

Courses for B.A (Programme) 1. Principles of Microeconomics-I and II. The courses are broadly similar in content to the General Elective Course at the Honours Level except for the addition of a few more topics. However, it is simplified to meet the requirements of Programme students. Principles of Microeconomics -I (Core paper B.A. (Programme) Semester I, Demand and Supply, Applications of Demand and Supply, Elasticity, Consumer Theory, Production and Costs, Perfect Competition. Principles of Microeconomics -II (Core paper B.A. (Programme) Semester II): Market Structures- Monopoly, Monopolistic Competition, Oligopoly, Contestable Markets, Game Theory, Role of Government; Consumer and Producer

Theory: Market efficiency, market failure, public goods, imperfect information, externalities, marginal cost pricing, adverse selection, social choice, government inefficiency; Income distribution and factor pricing; and International trade – Theories of absolute and comparative advantage, trade barriers and free trade/protectionism

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Course Outcomes
Department of POLITICAL SCIENCE

Sr. No.	Class/ Semester	Paper Code	Paper Title	Course Outcomes
1.	B.A F. Y Semester Ist	Pol 101	Basic concept of political science	Students will know about the meaning of state, government, sovereigns, citizenship and rights.
2.	B.A F. Y Semester Ist	Pol.102	Government and politics of Maharashtra	To know historical and political background of Maharashtra state, organisation of Maharashtra.
3.	B.A.F.Y. Semester ll	Pol.103	Basic concept of political science	To know meaning definition and types of Liberty,equality and justice. Student will understand the democracy system
4.	B.A F. Y Semester II	Pol. 104	Government and politics of Maharashtra.	To know historical background of Panchayat Raj, to get information about political parties in Maharashtra.
5.	B.A S. Y Semester III	Pol. 105	Indian Government and politics.	To introduce Indian constitution, fundamental rights, to study Indian government, budgetary process, constitutional institutions
6.	B.A S. Y Semester III	Pol. 106	International relations	To study approaches of international relations, Indian foreign policy, the concepts of national interest and national power, international institutions.
7.	B.A S. Y Semester IV	Pol. 107	Indian Government and politics	To know about supreme court, centre state relations, ideology and program of political parties in India, importance of election, challenges before Indian democracy.
8.	B.A S. Y Semester IV	Pol. 108	International relations	To know about collective security and deterrence, major issues in internationalism, international and regional organisations.
9.	B.A.T.Y. Semester	Pol. 109	Indian political thinkers	To study thoughts of Raja Ram Mohan Roy, Swami Dayanand Saraswati, Gopal Krishna

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				Gokhale, Lokmanya Tilak, Mahatma Gandhi.
10.	B.A T. Y Semester V	Pol. 110	Western political thinkers	To study views of Plato, to knows thought of Aristotle, Nicolo Machiavelly, Thomas hobs, John lock.
11.	B.A T. Y Semester V	Pol. 111	Political ideologies	Students will able to introduce to nationalism, liberalism, democracy, imperialism, feminism.
12.	B.A.T.Y. Semester VI	Pol. 112	Indian political thinkers	To study views of Maulana Azad, thoughts of Jawaharlal Nehru, m n Roy, Dr. Babasaheb Ambedkar, Jaiprakash Narayan.
13.	B.A T. Y Semester VI	Pol 113	Western political thinkers	To study views of Jean Jacques Roussean, John Stuart mill, Jeremy bentham, Karl marks, herald husky.
14.	B.A T. Y Semester VI	Pol. 114	Political ideologies	To introduce socialism, to study communism, fascism, anarchism, environmentalism.
15.	B.A T. Y Semester VI	Pol. 115	Project work	On the completion of course student will to learn about research and methodology, to improve scientific approach in the students, students will get basic knowledge about research.

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Dept. of Political Science

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Programme Specific Outcomes of P.A.

- Students will be able to lead and deal with Public governance.
- Students will participate and contribute to the policy process.
- Students will be able to analyze, synthesize,think critically,solve problems and make decision.
- Students will articulate and apply a public service perspective.
- Students will be able to communicate and interact productively with a diverse and changing workforce and citizenry.

DEPARTMENT OF PUBLIC ADMINISTRATION

Paper-I Principals and Concept of Public Administration

- To introduce concepts of Public Administration and History of the field of Public Administration
- To make students competent to face challenges in the field of Public Administration successfully prepare for the civil service.
- The students should be familiar with importance of Public Administration in routine life

Paper- II Public Administration in India

- To introduce Indian Administration structure and Indian Constitutional Framework
- To analyze the practical knowledge of Indian Administrative related various Mantra lay.
- To familiar with how to administrative adjudication and rule making by executive agencies.

Paper-III Maharashtra Administration

- The students will be aware about the process of administrative rule making as a part the legal process.
- To analyze the practical knowledge of Maharashtra Administration various Govt. Offices (Collector Office and DSP Office)
- Students will able to understand about local level District Administrative framework and function.

Paper-IV District Administration

- The students understand District Administrative System.
- To introduce the new trends in the Public Administration and how to use them for the society.
- To increase the high emotion of social commitment and Humanity in the students.

Paper-V Personnel Administration

- To make students competent to face challenges to the field of Public Administration successfully prepare for the competitive examination.
- To prepare students as a responsible citizen service.
- To introduce to students with the merit system in Public Administration including Civil Service.

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Paper-VI Panchayat Raj and Rural Development
- To introduce Indian Panchayat Raj System and Decentralization structure.
- The students will able to understand the problem related agriculture, industries,cooperative and infrastructure in the district.
- The students will be conversant in the ethical challenges of rural communities, especially as the related to issues of privacy and boundaries.

Paper-VII Financial Administration
- To acquaint the students with the concept of Financial Administration.
- To aware about function and role of Financial Agencies in India.
- To introduce about parliamentary control over Financial Administration.

Paper- IX Human Resource Development
- To familiar with need of Human Resource Development Institutions.
- To aware about challenges before Higher Education.
- To aware about growth of organization associated with the development of its workforce.

Paper-XI administrative Thinkers
- To understand the views of Administrative Thinkers.
- Students aware about Public Administration is to secure and strengths democratic Institution and mechanisms.

Paper- XIII Public Policy and Development
- The students will able to understand public policy analysis involves evaluting issues of public importance the objectives of providing facts and statistics about the extant ind impact of the various policies of the government.
- Students will be familiar with the mechanism operating in the major political institutions for the creation and implementation of public policies.

Paper-XIV Health Administration in India
- To promote awareness of health care among all section of the Indian people.
- Aware about Health Administrative System in India.
- To familiar with providing patient centered services by government.
- Students will be able to understand major issues of Health in India.

Paper- XV Recent Trends in Public Administration and Important Laws
- To introduce the new trends in the Public Administration and how to use them for society.
- The students will able to understand New Public Administration is an anti-positivist,anti-technical and anti-hierarchical reaction against traditional Public Administration.
- Critically assess various administrative system an modes of governance in specific policy contexts.

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Hindi department

Syllabus outcomes Dr.Omprakash Bansilal Zanwar

Class / Semester	Paper Code	Paper Title	Course Outcomes
B.A. 1st year Optional 1st Sem.1st	DSC-1 CC- 1A	हिंदी साहित्य का इतिहास (आदि तथा मध्यकाल) भाग-1	हिंदी भाषा के इतिहास का ज्ञान देकर हिंदी के संबंध में छात्रों को प्राथमिक ज्ञान देना
B.A.B.sc. 2nd year S.L. 3rd sem	S.L. Hindi	सामान्य हिंदी	गद्य में आत्मवृत, रेखाचित्र, संस्मरण निबंध यात्रा वृत के माध्यम से छात्रों को संस्कारित करना साथ ही साथ प्रयोजनमूलक हिंदी के माध्यम से प्रयोजनमूलक भाषा, भाषा शिक्षण ,व्यवसाय हिंदी, निबंध लेखन आदि पढ़ाना
B.A.2nd year Optional 6th , Sem. 3rd	Optional paper 6th	प्रयोजनमूलक हिंदी	हिंदी भाषा विकास, हिंदी भाषा का मानकीकरण, देवनागरी लिपि , प्रयोजनमूलक हिंदी का स्वरूप छात्रों को समझता है
B.A.3rd year Optional 10th 5th sem	Optional paper 10th	आदि तथा मध्यकालीन हिंदी साहित्य का इतिहास	हिंदी साहित्य इतिहास लेखन आदिकाल, भक्तिकाल ,रीतिकाल कि छात्रों को जानकारी
B.A.3rd year Optional 11th 5th Sem.	Optional paper 11th	साहित्यशास्त्र	साहित्य का स्वरूप, साहित्य के तत्व ,साहित्य के प्रयोजन, साहित्य के हेतु ,शब्द शक्ति विचार ,रस विचार का ज्ञान छात्रों को मिलता है
B.A. 1st year Optional 2nd Scm.2nd	DSC-1 CC -1B	कथा साहित्य	कहानियों के माध्यम से छात्रों को संस्कारित करना तथा उपन्यास के माध्यम से छात्रों को विधा का परिचय कराना
B.A.,Bsc,2nd year S.L. 4th Sem	S.L. Hindi	सामान्य हिंदी	गद्य की डायरी, व्यंग ,रिपोर्ताज ,निबंध , तथा जीवनी विधा के माध्यम से छात्रों को संस्कारित करना
B.A. 2nd year	Optional 8th	प्रयोजनमूलक हिंदी	

Optional 8th , sem4th			पारिभाषिक शब्दावली ,राजभाषा हिंदी, प्रयोजनमूलक हिंदी लेखन पक्ष, अनुवाद इन माध्यमों से छात्रों को संस्कारित करना
B.A.3rd year Optional 14th, Sem 6th	Optional paper 14th	आधुनिक हिंदी साहित्य का इतिहास	आधुनिक काव्य साहित्य का अध्ययन और गद्य साहित्य का अध्ययन के द्वारा छात्रों को विधा का परिचय कराना
B.A.3rd year Optional 15th Sem 6th	Optional paper 15th	साहित्यशास्त्र	अलंकार,छंदविचार,साहित्यविधाएं, आलोचना आदि के द्वारा छात्रों को साहित्य के द्वारा लेखन के द्वारा रोजगार निर्मिती करना साथ ही साथ द्विभाषी का कार्य करना

Department of -- Hindi-

डॉ.ओमप्रकाश बन्सीलाल झंवर

Course Outcomes(CO) of the paper

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Department of Psychology

paper code	Name of paper	Out Comes
PSY- 101	Introduction of general psychology	• Develop a working knowledge of Psychological contents, areas and applications of psychology. • Knowledge of the fundamental physiological functional mechanism behind the Nervous system in the human body.
Psy-102	Basic Concept of Social Psychology	• Develop insight and analyse the contribution of social psychologists to the understanding of human society. • Evaluate effective strategies in socialization, group processes (both inter and intra-group) and helping behaviour.
psy-103	Experiment	□ Ability to administer, analyse and interpret results from various psychological tools. Expanded knowledge of various assessment procedures. Learning regarding conduction of experiments.
psy-104	General Psychology	Extensive knowledge about different theories and principles of Cognition and Behaviour concerning the areas of Motivation, Emotion, Intelligence, Thinking, and Personality etc
psy-105	Social Psychology	• Ability to register the progression of theories in major areas in Social Psychology. • Interpret attitude formation and various methods to be used to change the attitude. • Understand aspects related to social psychology
psy-106	Psychometric test	• Ability to administer, analyse and interpret results from various psychological tests i.e. personality, intelligence stoichiometric data etc. • Enables students to learn the importance of psychological testing and the types of tests used.
PSY- 107	Psychology of Adjustment	Psychological adjustment to illness is a dynamic process that is shaped by a number of factors within the person, through interpersonal

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		relationships with friends and family, and by structural and sociodemographic factors such as age, gender and socioeconomic status, individually and in combination
PSY- 108	Psychological Testing	• Analyze and apply the understanding of psychological testing. • Interpret and assess the role of psychological testing in various settings
PSY- 109	Psychology practicum's	• Expanded knowledge of various assessment procedures. • Also make them learn to qualitatively and quantitatively analyse the data and interpret the scores obtained
PSY- 110	Psychology for Living	psychological adjustment to illness is a dynamic process that is shaped by a number of factors within the person, through interpersonal relation there Anxitydeprasion and Coping process.
PSY- 111	Psychological Statistics	• Learn categorization and presentation of data; graphical representation used to communicate data. • Execute qualitative and quantitative data analysis.
PSY- 112	Psychology practicum's	• Ability to administer, analyse and interpret results from various psychological tools. • Expanded knowledge of various assessment procedures. • Learning regarding conduction of experiments
PSY 113	Abnormal Psychology	☐ Identify different types of anxiety and mood disorders, their clinical picture and management. • Analyse Impact of socio-occupational & personal functioning
PSY- 114	Organizational Psychology	• Students will be able to describe concepts of psychology in the process of manpower training. • Design training & development process of an organizations
PSY- 115	Experiment/ Practicum	Ability to administer, analyse and interpret results from various psychological tools
PSY- 116	Introduction to Counselling	• Apply and develop conceptual difference between guidance counseling& psychotherapy. • Develop technique and implication of applied counseling skills in areas of practice.
PSY- 117	Basic Concept in Research Methodology	Explore and get introduced to the various statistical tools (parametric and non-parametric) used for analysis
PSY- 118	Experiment/Practicum	• Ability to administer, analyse and interpret

		results from various psychological tools. • Expand knowledge of various assessment procedures
PSY- 119	Psychopathology	• Students also learn to describe the diagnostic criteria, symptoms, course, incidence, prevalence, etiology, prognosis and correlates of major mental disorders and learn the psychological, biological, and sociocultural theoretical perspectives of abnormal behaviour
PSY- 120	Organizational Behaviour	• Students gain knowledge about the history of I/O psychology, job analysis, motivation, leadership, job satisfaction, work stress and health.
PSY- 121	Testing/ Practicum	• Knowledge of the ways to interpret the scores obtained through experiments and learn to discover the difference in between experimental and non- experimental set-up
PSY- 122	Counselling in Action	• Evaluate counselling theories & their application to the outside world. Classify the role and responsibilities of a professional counsellor . Student will be able to Evaluate various psychotherapies and schools in counselling techniques.
PSY- 123	Fundamentals of Behavioural Research	• Knowledge about hypothesis testing. • Execute qualitative and quantitative data analysis
PSY- 124	Testing/ Practicum	• Ability to administer, analyse and interpret results from various psychological tools.

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