Jijamata Mahavidyalaya Buldana
Department of Computer Science
Programme Outcomes(CO's)/ Programme Specific Outcomes (PSO) and Course Outcomes (CO's)

Programme Outcomes (POs):

POS1: IT Knowledge

Develop analytical, presentation, strategy formulation among students, through which the students get prepared and trend for building their carrier in computer science and its related applied technology, research and development.

POS2: Problem Analysis:

Identify, formulate, review research literature, and analyze complex problems reaching substantiated conclusions using first principles of Computer Science.

POS3: Design/ Development of solution:

Design solution for complex Computer Science based problems and design system that meet the specified needs.

POS4: Modern Tool Usage:

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

POS5: Environment and sustainability:

Understand the impact of the professional Computer Science solution in social and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

POS6: Ethics:

Apply ethical principles and commit to professional ethics and responsibilities and norms of the Computer Science practice.

POS7: Individual and team work:

Function effectively as an individual, and as a member of leader in diverse teams, and in multidisciplinary settings.

POS8: Communication:

Communicate effectively on complex Computer Science activities with the community and society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

POS9: Project management and finance:

Demonstrate knowledge and understanding Computer Science principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environment.

POS10: Life-long Learning:

Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes (PSO):

PSO1: Demonstrate mastery of Computer Science in the following core knowledge areas

o Fundamental of Computer and Programming Languages

o Web Technology, Databases, and Data Structure Development.

o Computer Hardware and Architecture

PSO2: Apply problem-solving skills and the knowledge of computer science to solve real world problems.

PSO3: Develop technical project, project reports in Computer Science domain.

Course Outcomes (CO's)

Fundamentals of Information Technology and 'C' Programming.

CO1: Understand the basic concept of Computer Architecture, Memory, Input Output Devices, and Peripheral devices.

CO2: Understanding the concept of Operating System, Need and Types of Operating system and File Handling.

CO3: Understanding Networking concepts and Introduction to Internet.

CO4: Recognize the basic terminology used in computer programming

CO5: Able to implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems.

CO6: Understand the concept of Constants and Variables and Data types.

CO7: Demonstrate an understanding of computer programming language concepts.

CO8: Ability to design and develop C programs, analyzes, and interprets the I/O Operations.

CO9: Learn the concept of Control statements in C Language.

CO10: Able to define data types and use them in simple data processing applications.

Web Technology and Advanced programming in C

CO1: Understanding the concept of Markup Languages including HTML, XML and Style Sheet.

CO2: Understand best technologies for solving web client/server problems

CO3: Choose, understand, and analyze any suitable real time web application.

CO4: Integrate java side scripting languages to develop web applications.

CO5: Extend this knowledge to .Net platforms.

CO6: Recognize the basic terminology in Advance C programming through Array, Pointer, String, Function, Structure Union and File handling concept.

CO7: Extend the knowledge of problem solving in advance programming.

Data Structure and C++

CO1: Understand the concept of Dynamic memory management, data types, and algorithms.

CO2: Understand basic data structures such as arrays, linked lists, stacks and queues.

CO3: Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.

CO4: Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.

CO5: Implement data structure algorithms using C++.

CO6: Describe the procedural and object oriented concepts with streams, classes, functions, data and objects.

CO7: Built ability to implement stack, queue and linked list operation through Programming.

RDBMS and PL/SQL

CO1: Explain the basic concepts of Databases Management System and Data Models.

CO2: Explain Relational Model, Relational Algebra and Relational Calculus.

CO3: Understand the E R model and relational model

CO4: Understand Functional Dependency and apply various normalization techniques.

CO5: Implement relational databases using a RDBMS.

CO6: Understanding the concept ot DDL and DML and Clauses.

CO7: Design a relational database system (Oracle, MySQL) by writing SQL using the system.

. Net Technology and Java Programming

CO1: Design and develop professional console and window based .NET application.

CO2: Construct classes, methods, and assessors, and instantiate objects.

CO3: Design and Implement Windows Applications using Windows Forms.

CO4: Create a program to connect with database and manipulate the records in the database using ADO .NET

CO5: Apply object oriented programming features and concepts for solving given problem.

CO6: Use java standard API library to write complex programs .

CO7: Implement object oriented programming concepts using java

CO8: Develop interactive programs using applets and swings.

Advanced Java and VB.net

CO1: Understand the basic structure of VB.Net and features of IDE

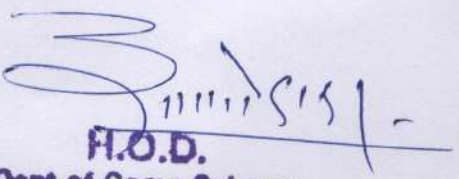**CO2:** Develop programs using primitives and constructs in VB .NET

CO3: Handle controls in Forms (message Box, InputBox),Windows MDI forms and Controls (Textbox, Creating Multiline, Word Wrap textboxes)

CO4: Understand various controls in VB.NET and able to develop programs using controls

CO5: Connect database by using ADO.NET and manipulate the database

CO6: Identify Java code utilities in applets, Java packages, and classes.

CO7: Write Java code using advanced Java features.

H.O.D.
Dept of Comp.Science
Jijamata Mahavidylaya.Buldana

JIJAMATA MAHAVIDYALAYA, BULDANA

Department Of Mathematics

Programme Outcomes

After complication of three year degree programme in Mathematics, a student should be able to

PO-1. Understood the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.

PO-2. Analyzed the given scientific data critically and systematically and the ability to draw the objective conclusions.

PO-3. Employ critical thinking and scientific knowledge to design, carryout, record and analyze the result of mathematical analysis.

PO-4. Create an awareness of the impact of mathematics on the environment, society and development outside the scientific community.

PO-5. Acquired the knowledge with facts and figures related to various subjects in pure sciences such as Mathematics.

PO-6. To inculcate the scientific temperament in the students and outside the scientific community.

PO-7. Use modern techniques, application of mathematics in various fields and for developing new software.

Programme Specific Outcomes

The student graduating with the Degree B.Sc with Mathematics as one of the three major subjects should be able to

PSO-1. A student should get adequate exposure to global and local a concern that explores them many aspects of Mathematical Sciences.

PSO-2. Acquire skills in some of the specialized areas of Mathematics and emerging developments in the field of Mathematics.

PSO-3. Ability to use acquired skills in Mathematics to solve a wide range of problems associated with Mathematics.

PSO-4. A student should a relational understanding of mathematical concepts and concerned structures and should be able to follow the patterns involved, mathematical reasoning

PSO-5. Acquire fundamental understanding of various fields of Mathematics such as mechanics, Graph Theory ,Relativity , Abstract algebra, linear algebra, Number theory, etc.

PSO-6 Propagate scientific temperament in society.

Course Outcome

Semester –I

After complication of these courses student should be able to

Algebra and Trigonometry

CO1 Apply De Moivre's theorem to solve problems on roots.

CO2 Have full knowledge of Trigonometric series, Gregory series, Euler's series, Machin's series, Rutherford series.

CO3 Find the characteristic equation, eigen values and correspondinig eigen vectors of a given matrix.

CO4 Find the coefficients of quadratic equations by using relation between roots and coefficients of equations.

CO5 Find the inverse of square matrix.

Differential and integral Calculus

CO1 Have full knowledge of limit and continuity for study the functions.

CO2 Study differentiability to apply it for day to day problems.

CO3 know the geometrical applications of mean value theorems.

CO4 study the difference between ordinary and partial differentiation.

CO5 Find nth derivative of product of two functions using Leibnitz's theorem and study integration for finding values of product of functions.

Semester –II

Differential equation Ordinary and Partial

CO1 Solve first order differential equation using different techniques

CO2 How to find the solution of linear and differential equations of second order with constant coefficients.

CO3 Students will be introduced to the complete solution of non-linear differential equations by using different method.

CO4 Students must know the methods of solving partial differential equations for more than one variable.

CO5 Students will study applications of differential equations.

Vector Analysis and Solid analytic Geometry

CO1 Students have knowledge about the vectors, their products, differentiation and integration.

CO2 They study divergence, curls directional derivative which are useful in physics.

CO3 Students have knowledge about integration which will be used to calculate the area under the curve.

CO4 Students studied the concepts of Geometry.

CO5 They study sphere, cone and Cylinder.

Semester –III

Advance Calculus

CO1 Students learn about sequence and their convergence using different test.

CO2 They have the knowledge of calculating the sum of infinite number of terms.

CO3 Students know that how to work on functions of two or more variables.

CO4 Students aware about the application of extremum value problem to solve industrial, society problems.

CO5 To solve the double and triple integrations.

Elementary Number Theory

CO1 Students learn about divisibility, prime numbers, congruence, quadratic reciprocity, Diophantine .

CO2 Learn methods and techniques used in number theory.

CO3 Write programs / functions to compute number theoretic functions.

CO4 Use mathematical induction and other types of proof writing techniques.

CO5 Students are able to effectively communicate mathematics.

Semester –IV

Modern Algebra

CO1 Have knowledge of algebraic structures groups, rings.

CO2 Know definition of homomorphism, isomorphism, and natural homomorphism.

CO3 Algebra of ideals, prime ideal, principal ideal, and quotient rings.

CO4 Knowledge of ring, integral domain, field.

CO5 Extend group structure to finite permutation group.

Classical Machanics

CO1 Knowledge of degree of freedom generalized coordinates and constraints.

CO2 Knowledge of solving the problems of motion of a system of particles.

CO3 Kepler's problem to know the universe.

CO4 Variation techniques for extremum.

CO5 Different principles to study motion of particles and study the motion of a rigid body.

Semester –V

Mathematical Analysis

CO1 To solve examples of improper integral.

CO2 Students will be introduced to the concept of continuity of complex functions.

CO3 Students will have a working knowledge of differentiability for complex functions and be familiar with the Cauchy - Riemann equations.

CO4 Students will be introduced to metric spaces, cauchy sequences.

CO5 Understand purpose and functions of the gamma and beta functions.

Mathematical Methods

CO1 Students will have full knowledge of Legendre's equation.

CO2 The students are expected to learn Bessel's equation, generating function for $J_n(x)$, Sturm Lowville boundary value problem.

CO3 Understand Fourier series.

CO4 Apply Laplace transform to solve ordinary and partial differential equation.

CO5 to understand Fourier transform.

Semester –VI

Linear Algebra

CO1 Analyze finite and infinite dimensional vector spaces and subspaces over a field and their properties, including the basis structure of vector spaces.

CO2 Students will be introduced to Recognize the concepts of the terms span, L.I, basis, and dimension, and apply these concepts to various vector spaces and subspaces.

CO3 Use the definition and properties of linear transformations and matrices of linear transformations and change of basis, including kernel, range and isomorphism.

CO4 • Compute inner products and determine orthogonality on vector spaces, including GramSchmidt orthogonalization process.

CO5 Understand Modules and Sub Modules

Special Theory of Relativity

CO1 Use tensor notation in relativity theory.

CO2 Apply the concept of length contraction and time dilation as well as use Lorentz transformation .

CO3 Solve simple kinematical problems.

CO4 Analyze Maxwell's equations and use their relativistic invariance.

CO5 Compute basic quantities in differential geometry. CO6 Analyze Einstein's Field equations.

Dr. Arvind S.Patil

Professor & Head

Mathematics Department

Jijamata Mahavidyalaya,Buldana

BACHELOR OF SCIENCE (B Sc)

ZOOLOGY

PROGRAMME OUTCOMES

After Successful Completion of three year degree programme in Zoology, a student should be able to,

PO-1: To impart skills required to gather information from resources and use them.

PO-2: To give need based education in Science of the highest quality at the undergraduate level.

PO-3: To perform experiments and interpret the results of observation.

PO-4: To provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.

PO-5: Use of ICT in understanding the concepts and collecting the knowledge.

PROGRAMME SPECIFIC OUTCOMES

POS-1: To acquire knowledge about various Phyla in animal kingdom.

Pos-2: To give Knowledge of life and diversity of non-chordates and chordates..

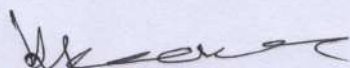POS-3: To give Knowledge of basic of cell and developmental biology.

POS-4: To acquire Knowledge of Advance Genetics.

POS-5: To give Knowledge of concepts in animal physiology and animal ecology.

POS-6: To provide Knowledge of Economic Zoology and concept of Evolution.

POS-7: To provide Knowledge of an essence of molecular biology and biotechnology.

The systematic and planned curricula from first year to final year (B.Sc. I to B.Sc. III) shall motivate and encourage the students for pursuing higher studies in Botany for becoming an expert Zoologist.

Dr.Mrs.V.R.Kakde
Supervisor Head,
Deptt.of Zoology
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OBJECTIVES:

1) To provide in depth knowledge of scientific and technological aspects of Zoology.

2) To familiarize with current and recent technological developments

3) To enrich knowledge through programmes such as industrial visits, Short term projects, -market survey, projects etc.

4) To train students in skills related to Zoological industry and market.

5) To create foundation for research and development in Zoology.

6) To develop analytical abilities towards real world problems.

7) To help students build-up a progressive and successful career in Zoology.

ZOOLOGY SEM I (1S)-

Life and Diversity of Non-Chordates

Course Outcomes

The basic topics related to the Classical Zoology which includes the studies of diversity of Animals life forms and their evolutionary relationship. It gives basic knowledge of Animal Kingdom through its classification and evolution of life. They will also learn various systems organized through a well-controlled and developed mechanism. It gives knowledge regarding,

CO-1: The history of Animal Systematic and its role in classification. They are able to make use of this knowledge for the identification and grouping of different animals based on the anatomy.

2. Knowledge of classification on the basis of anatomical difference into different groups.

ZOOLOGY SEM II (2S)-

Cell and Developmental Biology

Course Outcomes-

Ability to understand basics and fundamentals of life by studying cell, its organelles and their functions. They will also learn preliminary ideas of fertilization and development of life. It gives,

CO-1: On successful completion of this course students are able to describe, apply and integrate the basic concepts of Cell Biology i.e. Structure and Functions of different cell organelles.

CO-2: To understanding the structure, types and aberration of chromosome.

CO-3: To acquire knowledge regarding the basic anatomical concepts of Primary Structure of body of Animal. They will be able to discuss the idea of secondary growth.

CO-4: To acquire ability to understand the Tissues Arrangement in Animal Body.

CO-5: It gives knowledge regarding the formation of male and female gametes, their fusion, development of embryo, formation of Embryo.

ZOOLOGY SEM III (3S)-

Life and Diversity of Chordates and Concept of Evolution

Course Outcomes

Basic knowledge of Animal Kingdom through its classification and evolution of life. They will also learn various systems organized through a well-controlled and developed mechanism and in addition to this, To learn evolution of life from a unicellular life to a multicellular organism. This paper gives details of,

CO-1: Knowledge regarding the basic anatomical concepts of Primary Structure of body of higher animals.

CO-2: Knowledge regarding evolutionary evidences –direct and indirect.

CO-3: Animal adaptation-terrestrial, aquatic and desert.

ZOOLOGY SEM IV (4S)-

Advance Genetics and Concept of Ecology

Course Outcomes

Students get ability to understand modern and advance developments in the field of genetics; biotic and a biotic factors with their interaction to ecosystem. Such as,

CO-1: Knowledge of various factors of environment and their impact on growth and development of animals.

CO-2: Understanding the structure and function of ecosystem.

CO-3: Understanding the structure, types and aberration of chromosome.

CO-4: Understanding gene interaction and develop skill to solve genetically problem

CO-5: Knowledge about gene mutation, linkage and crossing over etc.

ZOOLOGY SEM V (5S)-

Animal Physiology and Economic Zoology

Course Outcomes

This paper is very helpful for understanding the mechanism of working of various systems in animal body. They will also learn applied and economic aspects of modern zoology by studying various cultures in the field of agriculture and aquaculture.

CO-1: Advance knowledge about animal physiology, metabolism and ecology.

CO-2: Understanding animal's growth mechanism, role of growth hormones in animal's development.

CO-3: Knowledge of various factors of environment and their impact on animal's growth and development.

CO-4: Understanding the structure and function of ecosystem.

Paper offers studies of physiological aspects of animals with respect to their development. This paper also offers an opportunity to study detail life cycle of animals which are beneficial to mankind and economy can risen.

ZOOLOGY SEM VI (6S)–

Molecular Biology and Biotechnology

Course Outcomes

To develop ability or to acquire-

CO-1: Knowledge about genetic material i.e. DNA, RNA etc.

CO-2: To have an understanding about the recombinant DNA technology, protein synthesis, protein sorting, cloning techniques to construct genomic libraries and abroad view about cloning vector types and strategies.

CO-3: To have knowledge about parameters involved in gene transfer techniques.

CO-4: To understand the different techniques used in Animal Tissue Culture and their Applications.

CO-5: To understand the functioning of various equipment's used in Tissue Culture Work.

CO-6: For understanding gene interaction and develop skill to solve genetically problem

Co-7: To acquire knowledge about gene mutation, linkage and crossing over etc.

Jijamata Mahavidyalaya, Buldana
Department of Physics

The Programme Outcomes (POs)

The under-graduate students, after completing their study of B.Sc. programme must acquire following characteristic attributes of science graduate.

PO-1   **Scientific Knowledge and Experimental Skills:** The graduates must be able to demonstrate fundamental concepts in science and apply it in relative specialized areas like research & development, teaching and government, social or public services.

PO-2   **Critical Thinking & Problem Solving ability:** The graduates must be able to employ critical thinking and problem solving skills find appropriate solutions for the scientific and technical problems in the fields related science subjects.

PO-3   **Team leading and working capability:** The graduates must be capable to work independently as well as a team leader or a member.

PO-4   **Project Management:** The graduates must be able to identify and mobilize the appropriate resources to manage and complete the undertaken project by observing responsible and ethical conduct and also with laboratory safety and hygiene.

PO-5   **Digital Proficiency to use Modern Digital Tools:** The graduates must be capable to use modern digital tools like computer, software and ICT for teaching, simulating the ideas and statistical or analytical data analysis.

PO-6   **Environmental and Societal Consciousness:** The graduates must be aware about the environmental & the societal problems and must be capable to use and demonstrate the scientific knowledge to address these problems and to find appropriate solutions thereof.

PO-7   **Communication skills:** The graduates must be able to transmit complex scientific and technical information in clear and concise manner relating to all areas of science subjects studied.

PO-8   **Ethics and Human values:** The graduates must be capable to think and behave rationally on the ethical issues they come across at their work place. Also, the graduates should adopt human values to keep harmony with individuals and with human beings.

PO-9   **National perspective:** The graduates must be able to develop national perspective for their career in the chosen field so that they could play a vital role in contributing in national development.

PO-10   **Lifelong Learning:** The graduates should adopt lifelong learning to keep pace with emerging trends in academics, research and developing technology.

The Programme Specific Outcomes (PSOs)

PSOs	The student graduating with the Degree B.Sc. with Physics as one of the three major subjects should be able to:
PSO-1	Acquire fundamental understanding of various fields of Physics such as mechanics, thermodynamics, optics, semiconductor physics, solid state physics, statistical mechanics, quantum mechanics, Astrophysics, Material science, Nuclear and Particle Physics, Atomic and Molecular Physics, Mathematical Physics, and its linkages with related disciplinary areas/subjects like Chemistry, Mathematics, Geology, Atmospheric Physics, Biophysics, etc.
PSO-2	Acquire skills in some of the specialized areas of Physics and emerging developments in the field of Physics.
PSO-3	Ability to use acquired skills in Physics to solve a wide range of problems associated with Physics.
PSO-4	Design & perform Physics-related experiments and apply skills to interpret experimental data collected manually or using appropriate softwares.
PSO-5	Propagate scientific temperament in society.

The Course Outcomes (COs) Stated by the Departments

B. Sc. I (SEM-I) Physics

After completing this course students must be able to;

CO1 Explain the basics of Kepler's laws, Newton's law, Gauss theorem and its application.

CO2 Explain linear momentum, angular momentum and moment of inertia (MI) of the bodies and determination of MI with the help of principal of perpendicular and parallel axis.

CO3 Explain fundamentals of harmonic oscillator model, including damped and forced oscillators and grasp the significance of terms like quality factor and damping coefficient.

CO4 Understand the principal of superposition of SHM, determination of velocity of wave using Kund's tube.

CO5 Understand elastic properties of materials, concept of bending behavior of beam and determination of elastic modules of given structure.

CO6 Understand viscous properties of fluids and applications of the Bernoulli's theorem.

CO7 Understand the concept of surface tension and to determine of surface tension by experimental methods.

B. Sc. I (SEM-II) Physics

After completing this course students must be able to;

CO1 Explain kinetic theory of gases and its implications familiarized with the thermodynamic parameters.

CO2 Understand the various thermodynamic process and work done in each of these processes.

CO3 Understanding about reversible and irreversible processes and also working of a Carnot's engine, and knowledge of calculating change in entropy for various processes.

CO4 Understand the importance of Thermo dynamical functions and applications of Maxwell's relations.

CO5 Understand the basic concept of motion of charge particle under electric and magnetic fields.

CO6 Apply the knowledge of basic circuital law and simplify the network using reduction techniques.

CO7 Analyze the circuit using Kirchhoff's law and Network simplification theorems like Thevenin's theorem, Norton's theorem, Superposition theorem, Milliman's theorem, etc.

CO8 Obtain the maximum power transfer to the load.

CO9 Analyze the AC circuits and understand the principle and operationof transformer.

B. Sc. II (SEM-III) Physics

After completing this course students must be able to;

CO1 Familiarized with gradient, divergence and curl of scalar and vector fields and their physical significances, evaluate the electrostatic fields and potential in free space.

CO2 Understand the production of magnetic field due to steady current and calculate magnetic fields using Boit-Savart and Ampere's law.

CO3 Understand the Maxwell's equation of electrodynamics, its applications to propagation of electromagnetic waves and significance of Poynting theorem (vector).

CO4 Formulate and solve the basic science problems on electromagnetism.

CO5 Explain the physical principles and applications of Electronics.

CO6 Understand the nature of semiconducting materials and the physics that influences the presence of charge carriers in a semiconductor.

CO7 Describe the factors that influence the flow of charge in semiconductors and the operation of semiconductor devices.

CO8 Familiarized with the operation of circuits based on diodes, bipolar transistors, and field effect transistors.

CO9 Using the test equipments such as a Function Generator, an Oscilloscope, a digital multimeter, and variable Power Supplies.

CO10 Understand the thermodynamic principles of atmospheric processes, physical processes and physical properties of the Earth and its surrounding space environment

B. Sc. II (SEM-IV) Physics

After completing this course students must be able to;

CO1   Generate the ability to predict behavior of optical instruments using geometric and wave approaches.

CO2   Formulate their understanding of fundamental optics to articulate the concepts and operating principles of super-resolution optical microscopes.

CO3   Understand the phenomenon of Interference, diffraction and polarization and to analyze the intensity variation of light due to this effect.

CO4   Understanding of optics and quantum mechanics to articulate the operational principles of lasers and the unique properties of laser light.

CO5   Explain working principle of lasers and its applications

CO6   Explain working principles of optical fiber and its use in communication.

CO7   Explain solar energy radiation, solar collectors, energy conversion systems and also power generation using geothermal and wind energy

B. Sc. III (SEM-V) Physics

After completing this course students must be able to;

CO1   Familiar with the main aspects of the historical development of quantum mechanics and be able to discuss and interpret experiments that reveal the wave properties of matter, as well as how this motivates replacing classical mechanics with a wave equation.

CO2   Understand the central concepts and principles in quantum mechanics, such as the Schrödinger equation, the wave function and its statistical interpretation, the uncertainty principle, stationary and non-stationary states.

CO3   Solve the Schrödinger equation on their own for simple systems in one to three dimensions.

CO4   Understand the vector atom model and apply its principles to the study of atoms and its behavior, origin of X- ray spectra and its characteristics.

CO5   Explain Raman effect and its importance as spectroscopic technique.

CO6   Understand the structure of atomic nuclei basic properties of a nucleus such as binding energy and nuclear forces.

CO7   Understand the basic properties of a nucleus such as binding energy and nuclear forces.

CO8   Understand mechanism of decay process of alpha beta and gamma particles.

CO9   Familiar the process of nuclear fission and fusion and concept of particle detector and accelerators.

CO10 Explain the concept of feedback in amplifiers.
      Design and analysis of amplifier and oscillator using BJT.

B. Sc. III (SEM-VI) Physics

After completing this course students must be able to;

CO1   Understand the concept of microscopic and macroscopic states and relationship between thermodynamics and statistics.

CO2   Familiar with classical (Maxwell-Boltzmann) statistics and quantum statistics (Bose and Fermi Dirac) statistics and able to apply for different systems of particles.

CO3   Distinguish amorphous and crystalline solids.

CO4   Knowledge of crystal systems and spatial symmetries and how crystalline materials are studied using diffraction. Calculate thermal and electrical properties in the free-electron model

CO5   Explain the concept of energy bands and effect of the same on electrical properties, various types of magnetic phenomenon, physics behind them and their properties.

CO6   Superconductivity, its properties, important parameters related to possible applications.

CO7   Understand the concept of nano-materials and the effect of increase in S/V ratio on the properties of materials.

CO8   Understand the concept of quantum confinement and its consequences.

Date
25/09/2022

Head of Department (Physics)
Jijamata Mahavidyalaya,
Buldana.

Jijamata Mahavidyalaya, Buldana

Programme Outcomes & Programme Specific Outcomes

Subject: Political Science

PO 1 : Political Science students will be able to know Indian Constitution and Constitutions of UK, USA and China. They can understand formation and structure of United Nations.

PO 2 : Political Science students will be able to write, read, speak and listen effectively in academic and political context.

PO 3: Political Science students will compare and contrast the various political systems that exist across the globe and analyze the political consequences of those variations.

PO 4: Political Science students will demonstrate civic responsibility and ethical reasoning within a variety of contexts.

PO 5: Political Science students will analyze the core intellectual traditions in political thought and apply their core tenets to contemporary political questions and issues.

PO 6 : Political Science students will analyze the election results of Central and State legislatures.

PO 7 : Political Science students will be able to construct research questions and use appropriate sources and research methods to answer them.

PO 8 : Political Science students will generate a scholarly product that demonstrates appropriate knowledge, information collection, technical proficiency,interpretation,presentation and reflection.

PO 9 : Political Science students will use analytical skills to understand civic, social and environmental challenges.

PO 10 : Political Science students will analyze individual and group political behavior; the political process, public policy and administration; and constitutional and legal laws within government.

COURSE OUTCOMES

SEMESTER – I

Course: Indian Constitutional Provisions and Local Self Government

After the completion of this course students will be able to:

CO 1: Salient feathers of the Indian Constitution, Nature and importance of Preamble, Fundamental Rights of Citizens.

CO2: Directive Principles of State Policy, Fundamental Duties of Indian Citizens and Laws about Citizenship.

CO 3: Election Procedure of President of India and his Rights, Role and Rights of Vice-President, Rights and Role of Prime Minister of India.

CO 4: Parliament: Structure and Powers of Loksabha and Rajysabha

CO 5: Indian Judiciary- Structure and jurisdiction of Supreme Court and High Court.

SEMESTER II

CO 1 : Election Commission of India- Its structure, powers and function and importance.

CO2 : Rights, Role and Position of Governor, Chief Minister and Council of Ministers.

CO3 : State Legislature- Structure and Powers of State Assembly and Council of States.

CO4: Local Self Government of Maharashtra-Muncipal Corporation, Nagar Palika & Gram Panchayat.

CO5 : political Participaton of women in Panchayat Raj, Nagpur Pact and Right to Information Act.

SEMESTER- III

Course : Comparative Government and Politics.

After completion of this course students will be able to :

CO1 : Salient features of Constitution of United Kingdom,Historical background of King and Crown, Rights of King, Role and Rights of British Prime Minister.

CO2 : Parliamentary System of U.K., Structure & Powers of House of Lords and House of Commons, Role of Opposition Party .

CO3 : Salient features of United States Constitution, President of U.S.A.-Election Process and his Rights, Council of Ministers, Vice-President – Election Process and his Rights.

CO4 : Legislature of U.S.A.- Structure and Powers of Senate and House of Representative, Supreme Court- Structure and Jurisdiction.

CO5 : South Asian Association for Regional Co-operation(SAARC)-Structure, Objectives and Functions.

SEMESTER-IV

CO 1 : Salient features of China's Constitution, Structure & Powers of National Peoples Congress, Structure & Powers of Standing Committee

CO2 : President of China – Appointment, Role & Powers, Structure & Powers of State Council of China, Role of Communist Party of China.

CO3 : Historical Background of United Nations, Charter, Objectives of United Nations, Elements of United Nations & their functions

CO4 : Security Council- Composition & Functions, Secretary General- Appointments & Functions.

CO5 : India & China Relations- Tibet Dispute, China's Role about India in United Nations,Impact of China's Goods & Market on Indian Economy.

SEMESTER V

Course : Modern Concepts and Policy in Politics

After completion of this course students will be able to :

CO1 : Meaning of Leadership, Factors of Leadership & Role of Leadership.

CO2 : Meaning & Nature of Indian Reservation Policy, Reservation in Indian Parliament, Reservation & Politics in India.

CO3 : Meaning & Nature of Nationalism, Factors of Nationalism, present Status of Indian Nationalism.

CO4 : Meaning of Communalism, Role of Communalism in Indian Politics, Present Status of Communalism in India.

CO5 : Meaning & Definition of Terrorism, Kinds of Terrorism, The Acts for Prevention of Terrorism in India.
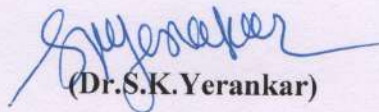
SEMESTER VI

CO1 : Aristotle's Concept of State, Mahatma Gandghi's Concept of Ramrajya.

CO2 : Concept of Democracy of Walter Bagehot, Abraham Lincoln's Concept of Democracy, Dr. B.R. Ambedkar's thought on Parliamentary Democracy.

CO3 : Machiaveli's Concept of Nationalism, Swami Vivekanda's Concept of Nationalism.

CO4 : Karl Marx's Concept of Socialism, Pandit Jawaharlal Nehru's Concept of Socialism, Concept of Socialism of Ram Manohar Lohiya.

CO5 : Concept of Behaviouralism of David Eston, Concept of Post Behaviouralism of Gabrial Almond, John Austin's Concept of Sovereignty.

(Dr.S.K.Yerankar)

Professor & Head

Jijamata Mahavidyalaya, Buldana
Faculty of Commerce and Management

Course Outcomes-(UG)

- ### Subject-Computer Fundamentals & Operating System-I

- Understand Evolution, Generation and Types of Digital Computer.
- Understand the Block Diagram of Computer, CPU elements and Types of Software
- Understand the concepts of Primary and Secondary Memory [RAM & ROM} of Computer System.
- Understand the concept of Input & Output Devices of Computer and how it works.
- Student will have a working knowledge of Paragraph Formatting and Saving and Printing a Document in Ms Word 2007.

- ### Subject-Computer Fundamentals & Operating System-II

- Student will able to understand the Concepts, Structure, types of Operating System.
- Understand the Features and Functions of Operating System.
- Learn about the modern communications Channel FAX, Voice mail, Video Conferencing and E-mail.
- Student will have a working knowledge of Create Table, Add Row and Columns and Mail Merge in Ms Word 2007.
- Student will have a working knowledge of Creating, Opening /Saving Presentations and working with different slide views in MS Power Point 2007.

- ### Subject-Information Technology & Business Data Processing-I

- Learned the concept of Data and Data Processing and Applications in Business.
- Learned the concept and Objective of Database, Data warehousing and Data Mining and its Applications.
- Learned about Database Management System(DBMS)
- Students will have a working knowledge of Spreadsheet Package.
- Students will have a working knowledge of basic functions and formulas in Ms-Excel.

o Subject-Information Technology & Business Data Processing-II

- Student will able to understand the Concepts and uses of Information and Information Technology.
- Student will able to understand the Concepts of Manual V/s Computerized Accounting.
- Learned about the Company Information menu and Gateway of Tally menu.
- Student will have a working knowledge of Company Creation, Groups Creation, Ledger and Voucher Creations in Tally.
- Learned about the Various Accounting Reports Displaying and Various Report Printing in Tally.

Subject-Internet & World Wide Web-I

- Understand the concept of Network and Types of Network.
- Understand evolution of internet, its applications and its basic services.
- Students will have a working knowledge of Electronic Mail and Gmail.
- Learned about the concept of WWW and Importance of Website in current era.

Subject-Internet & World Wide Web-II

- Student will able to understand the Concept and importance of web browser for browsing.
- Learned about the meaning, Features and Types of web directory and search engine.
- Student will able to understand the meaning and features of Facebook, Instagram, Twetter website..
- Student will have a working knowledge of Google Drive, Google Forms & Google Classroom.
- Learned about the various tools of FrontPage application for designing website in easy way.

Subject-Essentials of E-Commerce-I

- Learned and evaluated about the various components of E-Commerce.
- Learned about the current scenario and Government FDI policy about e-commerce in India.
- Learned about the B2C, C2B, C2C Retail e-commerce & Procedure and benefits of E-auction.
- Learned about the Meaning, Characteristics and e-Marketplace models of B2B E-Commerce.
- Thoroughly learned about concept and importance of e-payment and e-banking in current era.

Subject-Essentials of E-Commerce-II

- Learned about the Internet based E-Commerce Business models.
- Learned about the Internet Marketing and online marketing strategies.

- Learned the concept of EDI and JIT.
- Understand the meaning & objectives of E-governance in G2B, B2G and C2G.
- Conceptually learned the various e-governance models.

• Subject-Principles of Economics

- Learned and evaluated about the Meaning and Scope of Macro & Micro Economics.
- Understand how household (Demand) and business (Supply) interact its various markets structure to determine price and quality of a good product.
- Represent demand in graphical form, including the downward slope of the demand curve and what shifts the demand curve.
- Understand the links between production costs and the economic models of supply.
- Apply the concept of Sort run cost curve and Long run cost curve for finding revenue in Business.

o Subject-Business Economics

- Understand the Meaning, characteristics and Scope of Business and Managerial Economics.
- Analyze operations of markets under Price determination and Price discrimination monopoly.
- Understand the Meaning, Characteristics and determination of Perfect competition.
- Apply the Marginal productivity theory.
- Analyze operations of markets under Dynamic & Risk bearing theory of Profit.

• Subject- Advance Accountancy

- To record the basic Journal entries, Ledger & Trial Balance and rectify error's in Account.
- Able to prepare various Subsidiary Books &n Cash Books.
- Know about final Account of individual.
- Memorize how to Calculate Depreciation by applying various methods.
- Able to prepare Bank Reconciliation statement.

o Subject- Financial Accounting

- To record the Account or Non Trading Institution.
- Know about Account of Co – operative societies.
- To record Accounting for Agriculture Farms.
- Student can able to make necessary journal entries in the Books of record under hire purchase & installment purchase method.
- Know about insolvency & procedure of insolvency and able to prepare insolvency account.

PROGRAM OUTCOMES, PROGRAM SPECIFIC OUTCOMES, COURSE OUTCOMES BACHELOR OF COMMERCE

Program Outcome

- The students Apply basic mathematical and statistical skills necessary for analysis of a range of problems in economics, actuarial studies, accounting, marketing, management and finance

- This program could provide well trained professionals for the Industries, Banking Sectors, Insurance Companies, Financing companies, Transport Agencies, Warehousing etc.,

- To meet the well trained manpower requirements. The graduates will get hands on experience in various aspects acquiring skills for Marketing Manager, Selling Manager, Over all Administration abilities of the Company.

Programme Specific Outcome

- The students should possess the knowledge, skills and attitudes during the end of the B.com degree course. By virtue of the training they can become an Entrepreneur, Manager, Accountant , Management Accountant, cost Accountant, Bank Manager, Auditor, Company Secretary, Stock Agents, Government jobs etc.,

Course Outcome: Post Graduate Course

ADVANCED FINANCIAL AND COST ACCOUNTING.

- Understanding the concepts of financial and Cost Accounting

- Exposure to nature and advantages of Accounting, Accounting concepts and conventions.

- Introduction to Accounting standards in India

- Obtaining the knowledge of computerized Accounting.

- Getting knowledge about accounting procedure of partnership firm, accounts of professionals, single entry system, branch accounts and consignment accounts.

- To know installment and hire purchases systems

- Creating logical thinking power.

- Creating ability to take decision at different level of production activity like make or buy, project launching etc.

- Developing knowledge among students about cost ascertainment and fixation of selling price and cost control.
- Knowledge about presentation of cost accounting information for the purpose of decision making.
- Determination of profitable or unprofitable activity in business by using different cost accounting tools.
- Developing knowledge about preparation of tenders, quotations, etc.
- Helping in determining the product total cost and fixation of selling price.
- Creating skills about handling of various financial records, documentation, collection and classification of different costs.
- Enhancing the knowledge of business project analysis and cost planning and procedure.
- Getting known with how to publish information about production to management, consumer, Government, Employee at different levels for decision making purpose

ENTREPRENEURSHIP AND SKILL DEVELOPMENT

- Familiarize the students with the latest programs of the government authorities in promoting small and medium industries.
- Impart knowledge regarding how to start new ventures.
- Equip the students to have a practical insight for becoming an entrepreneur

BANKING AND INSURANCE SERVICES.

- Provide basic knowledge of the theory and practices of banking.
- Familiarize the students with the changing scenario of Indian Banking.
- Expose the students to the changing scenario of Indian banking.

E-COMMERCE & LEGAL SECURITY

- Knowledge of technologies supporting E-commerce, including web services and electronic payment system. And legal issues in E-Commerce Business.
- Recognition of fundamental principles of E-business and Knowledge about Electronic Data Interchange.

- Analysis of real business cases regarding their E-Business strategies and transformation processes and choices.
- Acquire knowledge of cyber Law and It Act for E-commerce business.

(Dr.E.J.Helge)
HoD
Dept.of Commerce & Management

Programme Outcomes, Programme Specific Outcomes and Course Outcomes

Department of Economics

Programme Outcomes:

Programme Outcomes for Economics (Undergraduate Level)

After completing the graduation With Economics Subjects, the student should have:

PO-1: Acquired knowledge with facts and figures related concerned with subjects such as Economics.

PO-2: Understood the basic concepts, fundamental principles, and various theories in the Economics

PO-3: Subjects Realized the importance literature in creating aesthetic, mental, moral, intellectual development of an individual and increasing a healthy society.

PO-4: Understood how issues in social science influence literature and how literature can provide solutions to the social issues.

PO-5: Appreciated that social issues are no longer permanent and largely depend on political, economical changes and also on the developments in science and technology.

PO-6: Participated in various social and cultural activities voluntarily. Written articles, novels, stories to spread the message of equality, nationality, social harmony, etc.

PO-7: Emerged as a multifaceted personality who self dependant is earning his own bread and butter and also creating opportunities to do so.

PO-8: Realized that pursuit of knowledge is a lifelong process and in combination with untiring efforts and positive attitude are necessary qualities for leading a successful life.

Programme Outcomes For Economics (Post Graduate Level)

After completion the Post Graduation in Economics, the student should have –

PO-1: Acquired a deep knowledge as possible in the subject concerned by making use of reference books, research journals, periodicals and internet facilities.

PO-2: Known in detail how the subject matter has developed from ancient time till this date with important landmarks, theories and people have contributed to achieve these.

PO-3: Critically evaluated the works of various authors or social scientists by considering the strength and weakness and suggestions probable modifications for improvement.

PO-4: Understood how the developments in the field of Humanities have improves the quality of life and how they have satisfied the aspirations, intensions likes and dislikes and how they could modify them.

PO-5: Realized how the studies in Economics have led to economical changes over last few centuries.

PO-6: Taken up an independent research project, plan and execute it and present the results and conclusions systematically at the end.

PO-7: Taken up independent creative writing for economic aspects research articles, reports, etc in various periodicals & journals.

PO-8: Recognized the areas where there is no further research work or areas which are not yet explored. Developed a strong belief that study of Economics will lead to development of soul, giving immense.

Program Specific Outcome:

Program Specific Outcome for Economics (Undergraduate Level)

PSO-1: On completion of B.A (Economics), Students are able to:

PSO-2: Understand basic concepts of economics.

PSO-3: Analyze economic behavior in practice.

PSO-4: Understand the economic way of thinking.

PSO-5: Analyze historical and current events from an economic perspective.

PSO-6: Write clearly expressing an economic point of view.

PSO-7: find alternative approaches to economic problems through exposure to coursework in Allied fields.

PSO-8: Create students ability to suggest solutions for various economic problems.

Program Specific Outcome for Economics (Post Graduate Level)

PSO-1: Understanding of different Economical Problems.

PSO-1: Understanding the applications in various fields like agriculture, Industrial And Market.

PSO-1: Understand in detail social, economic, environmental aspects related to tribal and rural Sectors.

Course Outcomes for Economics:

B. A. First Year Sem. I:- 1022- Micro Economic

CO-1: Students will be able to understand micro economic analysis.

CO-2: To understand individual agents of market.

CO-3: Students will be able to understand consumer behavior.

CO-4: Students will be able to understand concept of cost.

CO-5: Students will be able to understand Linear & Non- Linear functional relationship.

CO-6: Students will be able to understand price determination of factors.

CO-7: Students will be able to understand various theories of factors.

CO-8: Students will be able to understand concept of profit & Interest.

CO-9: Students will be able to understand market equilibrium of firm in monopolistic market.

B. A. First Year Sem. II:- Economy of Maharashtra

CO-1: Students will be able to understand Historical Background & Geographical Features of Maharashtra.

CO-2: Students will be able to understand Demographic features of Maharashtra.

CO-3: Students will be able to understand Agricultural problems of Maharashtra.

CO-4: Students will be able to understand Industry and Infrastructure in Maharashtra.

B. A. Second Year Sem. III:- Macro Economics

CO-1: Students will be able to understand macro economic analysis.

CO-2: Students will be able to understand of national income.

CO-3: Able to understand classical & Keynesian theories of output and employment.

CO-4: Able to understand consumption & Investment function.

CO-5: Students will be able to understand Quantity theory of money.

CO-6: Students will be able to understand various macroeconomic policy & Problems.

B. A. Second Year Sem. IV:- Banking

CO-1: Students will be able to understand Meaning And Types Of Bank.

CO-2: Students will be able to understand money & banking.

CO-3: Students will be able to understand RBI Bank system in India.

CO-4: Students will be able to understand working & operation of RBI.

CO-5: Students will be able to understand nature, scope & importance of monetary policy.

CO-6: Students will be able to understand commercial banking system in India.

CO-7: Students will be able to understand cooperative and rural banking in India.

CO-8: Students will be able to understand None banking financial institutions & financial services in India.

CO-9: Students will be able to understand IBRD, IMF& WTO.

CO-10: Students will be able to Knowledge of ATM, Debit Card, E-Marketing, Cashless Transaction Mobile Banking, E-Wallets, Core Banking RTGS &NEFT.

B. A. Third Year Sem. V:- Indian Economy

CO-1: Students will be able to understand Basic Feature of Indian Economy.

CO-2: Students will be able to understand Planning(Objective of11th & 12th Five year Plan) .

CO-3: Students will be able to understand Economics of Agricultural in India.

CO-4: Students will be able to understand Industrial in India.

CO-5: Students will be able to understand Environment and Pollution.

B. A. Third Year Sem. VI:- Demography

CO-1: Students will be able to understand meaning and scope of Demography.

CO-2: Students will be able to understand Fertility and Mortalityin India.

CO-3: Students will be able to understand Migration of Population.

CO-4: Students will be able to understand Effects of Migration on Population.

CO-5: Students will be able to understand Urbanization of Population.

CO-6: Students will be able to understand Population and Development.

M. A. First Year Sem. I :- Micro Economics I

CO-1: Students will be able to understand basic concept of Micro economics.

CO-2: Students will be able to understand ordinal utility analysis of consumer demand.

CO-3: Students will be able to understand modern utility analysis.

CO-4: Students will be able to understand theory of price.

CO-5: Students will be able to understand Concepts of Demand Law, Demand Elasticity, and Consumer Surplus.

CO-6: Students will be able to understand Concept of Cost, Revenue.

CO-7: Students will be able to understand Cost of Production and Cost Curve.

CO-8: Students will be able to understand Economics and Diseconomies of scale.

M. A. First Year Sem. I :- Macro Economics I

CO-1: Students will be able to understand various macroeconomic policy.

CO-2: Students will be able to understand various macroeconomic problems.

CO-3: Students will be able to understand Quantity theory of money.

CO-4: Students will be able to understand process of credit creation by commercial banks.

M. A. First Year Sem. I :- Statistics for Economics - I

CO-1: Students will be Able to understand meaning, scope & importance of statistics.

CO-2: Students will be Able to understand measuring central tendency.

CO-3: Students will be Able to understand dispersion and co-efficient.

CO-4: Students will be Able to understand methods of correlation.

CO-5: Students will be Able to understand measures and types of price index.

M. A. First Year Sem. I :- History of Economic Thought

CO-1: Students will be able to understand Pre Adamite Thought-Mercantilism & Physiocracy, Kautulys's Arthshastra and Buddha's Dhamma.

CO-2: Classical Economic Thought- Adam Smith, Recardo, Malthus, J. B. Say, J. S. Mill.

CO-3: Modern Economic Thought: Pigou, Marshall, Keynes, J. A. Schumpeter.

CO-4: Indian Economists Thought: Dr. Ambedkar, M. K. Gandhi, Dadabhi Navroji, Jyotirao Phule, Dr. Panjabrao Deshmukh.

M. A. First Year Sem. II :- Micro Economics II

CO-1: Students will be able to understand the theory of oligopoly & duopoly.

CO-2: Students will be able to understand the new theories of oligopoly market.

CO-3: Students will be able to understand theory of distribution.

CO-4: Students will be able to understand general equilibrium & economic efficiency & welfare.

M. A. First Year Sem. II :- Macro Economics II

CO-1: Students will be able to understand The Concept & Measurement of National Income.

CO-2: Theory of Employment and consumption function.

CO-3: Multiplier and Investment function.

CO-4: Classical approach to demand for money: Milton Friedman's approach.

CO-5: Students will be able to understand RBI approach to money supply.

M. A. First Year Sem. II :- Statistics for Economics – II

CO-1: Students will be able to understand Method of Data Collection.

CO-2: Types of measures of central Tendency.

CO-3: Students will be able to understand Variation, Skewness. Correlation & Regression Concepts.

CO-4: CSO, NSSO, Recent Population Census.

CO-5: Students will be able to understand Agricultural and Industrial Statistics.

M. A. First Year Sem. II :- Industrial Economics - II

CO-1: Students will be able to understand Meaning, Scope, Need and Significance of the study of Industrial Economics.

CO-2: Students will be able to understand over of industrial policy prior to 1991.

CO-3: Students will be able to understand industrial Location and Regional Development.

CO-4: Students will be able to understand Profitability and Investment in industries.

CO-5: Students will be able to understand Industrial Policy & Industrial Disputes.

M. A. Second Year Sem. III :- Economics of Growth & Development – I

CO-1: Students will be able to understand concept of development.

CO-2: Students will be able to understand concept of growth.

CO-3: Students will be able to understand population & human development.

CO-4: Students will be able to understand concept of poverty & development.

CO-5: Students will be able to understand the economic growth & technological changes.

M. A. Second Year Sem. III :- International Trade and Finance I

CO-1: Students will be able to understand international trade theories.

CO-2: Students will be able to understand gains from international trade & trade policy.

CO-3: Students will be able to understand concept of exchange rates.

M. A. Second Year Sem. III :- Research Methodology For Economics

CO-1: Students will be able to understand methods of data collection & analysis.

CO-2: Students will be able to understand contents of report writing.

CO-3: Students will be able to understand concepts of research designing.

CO-4: Students will be able to understand concepts of hypothesis testing methods.

M. A. Second Year Sem. III :- Financial Institute And Management

CO-1: Students will be able to understand Non banking financial institutions & financial in India.

CO-2: Students will be able to understand commercial banking system in India.

CO-3: Students will be able to understand cooperative and rural banking in India.

CO-4: Students will be able to understand working & operation of RBI.

CO-5: Modern banking & Financial Markets in India.

CO-6: Students will be able to understand the Indian capital market.

M. A. Second Year Sem. IV :- Economics of Growth & Development – II

CO-1: Students will be able to understand some growth models.

CO-2: Students will be able to understand the Neo- Classical & Cambridge models of growth.

CO-3: Students will be able to understand issues & techniques of economic growth.

M. A. Second Year Sem. IV :- International Trade and Finance II

CO-1: Students will be able to understand international trade theories.

CO-2: Students will be able to understand gains from international trade & trade policy.

CO-3: Students will be able to understand concept of BOP & BPT.

CO-4: Students will be able to understand concept of exchange rates.

Dr. D. J. Kande

Jijamata Mahavidyalaya, Buldana

Department of Chemistry

Subject: Chemistry

CO and PO

PROGRAMME SPECIFIC OUTCOMES

Programme outcome after successful completion of B.Sc. with Chemistry students should able to programme specific outcomes

PSO1: - Gain the knowledge of chemistry through theory and practical.

PSO2:- To explain nomenclature stereochemistry, structure, reactivity and mechanism of chemical reaction.

PSO3:- Identify chemical formula and solve numerical problems.

PSO4: Use modern chemical tools models charts and equipments.

PSO5:-Know structure activity relationship.

PSO6:- Understand good laboratory practice and safety.

PSO7:- Develop research oriented skills.

PSO8:-Make aware and handle the sophisticated equipments.

SEMISTER-I

COURSE OUTCOMES

INORGANIC CHEMISTRY

CO1:- Get the knowledge of periodic classification of elements.

CO2:- Understand periodic properties.

CO3:- Know the periodic classification in S -Block, Block.

CO4:- Discuss the different physical and chemical properties.

ORGANIC CHEMISTRY

CO1:- Get the knowledge of inductive effect, electrometric effect, resonance and hyper conjugation.

CO2:- Acquaint about reactive intermediate.

CO3:- To study aliphatic hydrocarbon and their properties.

CO4:- Information about aromatic hydrocarbon.

PHYSICAL CHEMISTRY

CO1:- To get knowledge of thermodynamics.

CO2:- Solve numerical problems on thermodynamics.

CO3:- To understand gaseous state.

CO4:- To understand phase rule and different system.

ORGANIC PRACTICAL

CO1:- To develop skill regarding different methods of organic preparation.

CO2:- To develop new concept of green synthesis.

CO3:- To develop skill of organic preparation.

INORGANIC QUALITATIVE ANALYSIS

CO1:- Identify acidic and basic radical from mixture.

CO2:- To develop skill of inorganic separation.

CO3:- To develop idea about semi microanalysis.

SEMISTER-II

COURSE OUTCOMES: After completion these courses students able to

INORGANIC CHEMISTRY

CO1:- To understand the concept of polarization, covalent bonding acid and bases.

CO2:- To get the knowledge of P- block and Nobel gas element.

CO3:- To understand concept of hybridization type of hybridization, geometry.

CO4:- Know information regarding gravimetric analysis.

ORGANIC CHEMISTRY

CO1:- To get knowledge of alkyl halide, aryl halides preparation properties uses.

CO2:- To develop method of preparation of phenol, ethers and epoxides

CO3:- To get new method of synthesis.

PHYSICAL CHEMISTRY

CO1:- To understand chemical kinetics order, molecularity and psudounimolecular reaction.

CO2:- To understand first, second order reaction their characteristics examples.

CO3:- To study electrical properties for polar and non polar molecule.

CO4:- To know magnetic properties paramagnetic, diamagnetic, and ferromagnetic and antiferromagnetic.

CO5:- To measure magnetic susceptibility.

ORGANIC CHEMISTRY PRACTICAL

CO1:- Analysis of organic compound and to study different parameter like MP, Element detection, functional group, derivative preparation.

CO2:- Analysis of glucose α-naphthol, β-naphthol, toludine, anthracine, benzoic acid and salicylic acid.

PHYSICAL CHEMISTRY PRACTICAL

CO1:- To measure surface tension, viscosity, parchore value and cleaning power of detergent.

CO2:- To determine activation energy of reaction between $K_2S_2O_8$ and KI.

SEMISTER III

COURSE OUTCOME: - After completion of these courses students able to

INORGANIC CHEMISTRY

CO1:- To understand the concept of covalent bonding, metallic bonding.

CO2:- To get the knowledge of VSEPR Theory.

CO3:- Know frees electron theory, valence bond theory and molecular orbital theory.

CO4:- To understand concept of volumetric analysis.

CO5:- Know information regarding gravimetric analysis.

ORGANIC CHEMISTRY

CO1:- To get the information of different aldehyde and carboxylic acid.

CO2:- Understand the terms optical isomerism and conformational isomerism.

CO3:- To know meaning of resolution enantiomer, disteriomer R and S configuration.

CO4:- To understand the terms Newman's projection formula, sawhorse's projection formula.

PHYSICAL CHEMISTRY

CO1:- To get the knowledge of thermodynamic and equilibrium.

CO2:- To solve the numerical problem on thermodynamics.

CO3:- To understand the concept of liquid state surface tension, viscosity.

CO4:- To Understand measurement application of surface tension and viscosity.

CO5:- To understand principal of redox titration.

CO6:- To Inculcate importance of water measurement of different parameters.

CO7:- Importance of different analysis.

CO8:- To develop skill based aptitude among the students.

INORGANIC CHEMISTRY PRACTICAL

CO1:- To develop concept among the students for preparation of different solutions.

CO2:- To perform redox titration, idiometric and iodometric titration.

PHYSICAL CHEMISTRY PRACTICAL

CO1:- To determine skill of construction of phase diagram.

CO2:- To develop laboratory skill for study order of reaction.

SEMISTER IV

COURSE OUTCOMES: - After completion of these course students able to

INORGANIC CHEMISTRY

CO1:- Knowledge about third transition series elements.

CO2:- To develop skill among the students for extraction of elements.

CO3:- To get the knowledge of metallurgy.

CO4:- To understand inner transition elements.

ORGANIC CHEMISTRY

CO1:-Information regarding polynuclear hydrocarbon

CO2;- To understand the chemistry of reactive methelene group

CO3:- To include importance of carbohydrate.

CO4:- To acquire importance of amino acid, diazonium salts and proteins.

PHYSICAL CHEMISTRY

CO1:- To know the importance of colligative properties.

CO2:- To solve numerical problems.

CO3:- To understand crystalline state by using different models and videos.

CO4:- To solve numerical problem on crystallography.

INORGANIC CHEMISTRY PRACTICAL

CO1:- To know various parameters of water like hardness of water and estimation.

CO2:- Estimation of $KMnO_4$ colorimetrical and also copper.

PHYSICAL CHEMISTRY PRACTICAL

CO1:- To develop skill regarding separation of caffine, nicotine and casein.

CO2:- Determination of equivalent weight of organic acid.

SEMISTER V

COURSE OUTCOMES: - After completion of these course students able to

INORGANIC CHEMISTRY

Co1:- To know the meaning of various terms involved in coordination chemistry.

CO2:- To understand Varner's formulation of complexes and identify the type of vacancies.

CO3:- To get the importance of electronic spectra of transition series element.

CO4:- To solve numerical on crystal field theory.

ORGANIC CHEMISTRY

CO1:- Information regarding heterocyclic compounds their synthesis physical and chemical properties.

CO2:- The knowledge of various drugs their synthesis and applications.

CO3:- Knowledge about various pesticides and herbicides.

CO4:- Acquaint about mode of action of drugs on various dieses.

PHYSICAL CHEMISTRY

CO1:- To understand concept of photochemistry.

CO2:- To understand different terms lamber's law, beer's law, quantum yield, florescence, phosphorescence.

CO3:- Derive expression for rotational spectra, vibrational spectra, and band spectra.

CO4:- Solve numerical on rational and vibrational spectroscopy.

INORGANIC CHEMISTRY PRACTICAL

CO1:- To develop skill for inorganic complex salt preparation.

CO2:- To know idea for preparation of complex like tetra amine Cu(II) sulphate,hexamine nickel (II) chloride Prussian blue, sodium thiosulphate.

PHYSICAL CHEMISTRY

CO1:- To develop skill for handling various sophisticated equipments.

CO2:- To perform titration and estimation by conductometry and potetiometrycally.

SEMISTER VI

COURSE OUTCOMES: - After completion of this course student able to

INORGANIC CHEMISTRY

CO1:- To get the knowledge of substitution of reaction SN1 and SN2 reaction.

CO2:- To understand various concept of Beer's law verification of Beer's law expression.

CO3: - To understand the chromatography types.

CO4:- To get information of organometalic compound.

CO5:- To know the role of sodium, potassium, calcium, magnesium, hemoglobin, myoglobin in biological system.

ORGANIC CHEMISTRY

CO1:- To understand different spectroscopic terms in electronic spectroscopy, chromospheres, oxochrome, bathochromic shift and hypsochromic shift.

CO2:- Application of electronic spectra for dying on saturated aldehydes and ketones aromatic compounds.

CO3:- To understand concept of NMR, Mass spectroscopy and their application in structure determination.

CO4:- Solve numerical on spectroscopy.

PHYSICAL CHEMISTRY

CO1:- To get information about redox potential determination types of different electrode.

CO2:- To determine PH solution by using hydrogen glass quinhydrone electrode.

CO3:- To understand different terms of nuclear chemistry, cell model, liquid drop model and meson theory.

CO4:- Knowledge about nuclear fussion and fussion Q value.

CO5:- Application of radio isotope in industries agriculture and medicine.

ORGANIC CHEMISTRY PRACTICAL

CO1:- To develop skill among the students to perform titration.

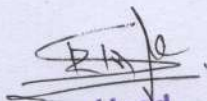CO2:- To know the idea to perform various titration formaldehyde, ascorbic acid, phenol, anylene, and urea.

CO3:- To develop skill based practical like separation of mixture of dyes.

PHYSICAL CHEMISTRY PRACTICAL

CO1:- To give knowledge to students for handling various sophisticated equipments.

CO2:- To develop titration skill for potentiometry and PH metry.

CO3:- To verifies lamberts' beer's law by using colorimeter.

Head
P. G. Department of Chemistry
Jijamata Mahavidyalaya, Buldana.