2.6.2 Attainment of POs and COs are evaluated. Explain with evidence in a maximum of 500 words PragtikShikshanSansta's,

NUTAN ARTSCOLLEGE, RAJAPUR

TAL- SANGAMNER DIST AHMEDNAGAR



ARTS, COMMERCE AND SCIENCE

Affiliated to SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE INTRODUCTION:

For every stream, broad expectations listed by the university as well as Institution. The goal of creating an academic program assessment plan is to facilitate continuous program level improvement. A program assessment plan should be developed collaboratively among faculty who teach the program. A program level outcome assessment plan provide faculty with a clear understanding of how their program is assessed.

Program Outcomes (POs) is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies and programs particularly about their effectiveness and efficiency. In both the public and private sectors, stakeholders often want to know whether the programs they are funding, implementing, voting for, receiving or objecting to are producing the intended effect. While program evaluation first focuses around this definition, important considerations often include how much the program costs per participant, how the program could be improved, whether the program is worthwhile, whether there are better alternatives, if there are unintended outcomes, and whether the program goals are appropriate and useful. Evaluators help to answer these questions, but the best way to answer the questions is for the evaluation to be a joint project between evaluators and stakeholders

Programme Specific Outcomes (PSOs) are narrow statements that describe what the students are expected to know and would be able to do upon the graduation.

Radlay

Program outcomes represent broad statements that incorporate many areas of inter-related knowledge and skills developed over the duration of the program through a wide range of courses and experiences. They represent the big picture, describe broad aspects of behaviour, and encompass multiple learning experiences.

Course outcomes (Cos) also referred as learning outcomes are measurable statements that concretely formally state what students are expected to learn in a course. While goals or objectives can be written more broadly, learning outcomes describe specifically how learners will achieve the goals. **FACULTY OF SCIENCE**

PO-1: Conduct research relevant to a scientific issue, evaluate different sources of information including secondary data, understanding that a source may lack detail or show bias.

PO-2: Appreciate the role of science in society; and its personal, social and global importance; and how society influences scientific research.

PO-3: To understand and analyze the data (qualitatively/quantitatively) to identify patterns and relationships, identify anomalous observations, draw and justify conclusions.

PO-4: To recognize questions that are appropriate for scientific investigation, pose testable hypotheses, and evaluate and compare strategies for investigating hypotheses.

PO-5: Students should appreciate the role of science in society; and its personal, social and global importance.

PO-6.Understanding environmental concerns by the students at the undergraduate level.

PO-7.Understanding the relationship of man with the environment and help them change his attitude for more positive, proactive, eco-friendly and sustainable lifestyles.

PO-8.Getting information about climate change, Global warming, Acid rain, Green house effect, Ozone, layer depletion.

PO-9.Cultivating attitudes to safeguard the environment built particularly with field experience.

PO-10.Realization of the impact of human actions on the immediate environment and the linkage with the larger issues.

Department of Chemistry

Programme Outcomes, Programme Specific Outcomes, Course Outcomes Choice Based Credit System [CBCS] 2019 Pattern

First Year Bachelors of Science

(F. Y. B. Sc.) From Academic Year 2019-20

Programme Outcomes

After completion of First Year Students should be able to

- 1. To understand basic concept of physical, organic and Inorganic chemistry.
- To impart practical skills and learn basics behind experiments.
- 3. To prepare background for advanced and applied studies in chemistry.

FY BSc SEMESTER-I

CH-101: Physical Chemistry

After completing the course work learner will be acquired with knowledge of chemical energetics, Chemical equilibrium and ionic equilibria. After completion of this course students should be able to

1. Students will be able to apply thermodynamic principles to physical and chemical process 2. Calculations of enthalpy, Bond energy, Bond dissociation energy, resonance energy

3. Variation of enthalpy with temperature -Kirchoff's equation

4. Third law of thermodynamic and its applications'

- 5. Chemical Equilibrium Knowledge of Chemical equilibrium will make students to understand
- 6. Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
- 7. Exergonic and endergonic reaction

8. Gas equilibrium, equilibrium constant and molecular interpretation of equilibrium constant 9. Van'tHaff equation and its application.

10. Ionic equilibria will lead students to understand

a). Concept to ionization process occurred in acids, bases and pH scale

b). Related concepts such as Common ion effect hydrolysis constant, ionic product, solubility product

c). Degree of hydrolysis and pH for different salts, buffer solutions.

CH- 102: Organic Chemistry

After completion of this course students should be able to

1. The students are expected to understand the fundamentals, principles, and recent developments in the subject area.

2. It is expected to inspire and boost interest of the students towards chemistry as the main subject.

3. To familiarize with current and recent developments in Chemistry.

4. To create foundation for research and development in Chemistry.

CH- 103: Chemistry Practical Course I

After completion of this course students should be able to

Principat)

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1. Knows the Importance of chemical safety and Lab safety while performing experiments in laboratory.

2. Determination of thermochemical parameters and related concepts.

3. Techniques of pH measurements.

4. Preparation of buffer solutions.

5. Elemental analysis of organic compounds (non instrumental).

6. Chromatographic Techniques for separation of constituents of mixtures

FYBSC SEMESTER-II

CH-201: Inorganic Chemistry

After completion of this course students should be able to

1. Various theories and principles applied to revel atomic structure.

- 2. Origin of quantum mechanics and its need to understand structure of hydrogen atom.
- 3. Schrodinger equation for hydrogen atom.
- 4. Radial and angular part of hydrogenic wave functions.
- 5. Significance of quantum numbers.
- 6. Shapes of orbitals.

7. Explain rules for filling electrons in various orbitals- Aufbau's principle, Pauli exclusion principle, Hund's rule of maximum multiplicity.

8. Discuss electronic configuration of an atom and anomalous electronic configurations

9. Describe stability of half-filled and completely filled orbitals.

10. Discuss concept of exchange energy and relative energies of atomic orbitals.

11. Design Skeleton of long form of periodic table.

12. Describe Block, group, modern periodic law and periodicity.

13. Classification of elements as main group, transition and inner transition elements.

14. Write name, symbol, electronic configuration, trends and properties.

15. Explain periodicity in the following properties in details:

a. Effective nuclear charge, shielding or screening effect; some numerical problems.

b. Atomic and ionic size.

c. Crystal and covalent radii

d. Ionization energies

e. Electronegativity- definition, trend, Pauling electronegativity scale. f. Oxidation state of elements

16. Attainment of stable electronic configurations.

17. Define various types of chemical bonds- lonic, covalent, coordinate and metallic bond' 18. Explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and solvation energy and their importance in the context of stability and solubility of ionic compounds.

19. Summarize Born-Lande equation and Born-Haber cycle.

20. Define Fajan's rule, bond moment, dipole moment and percent ionic character.

21. Describe VB approach, Hybridization with example of linear, trigonal, square planer, tetrahedral, TBP, and octahedral.

22. Discuss assumption and need of VSEPR theory

23. Interpret concept of different types of valence shell electron pairs and their contribution in bonding.

24. Application of non-bonded lone pairs in shape of molecule .

25. Basic understanding of geometry and effect of lone pairs with examples such as CIF3, CI2O, BrF5, XeO3 and XeOF4.

Principat)

CH- 202: Analytical Chemistry

Students will know about basics of analytical chemistry, some techniques of analysis and able to do calculations essential for analysis. After completion of this course students should be able to

1. Introduction to Analytical Chemistry i. Analytical Chemistry –branch of chemistry ii. Perspectives of analytical Chemistry iii.analytical problems

2. Calculations used in Analytical Chemistry

i. Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution

ii. Relation between molecular formula and empirical formula

iii. Stoichiometric calculation

iv. Define term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration.

v. SI units, distinction between mass and weight

vi. Units such as parts per million, parts per billion, parts per thousand, solution-dilatant volume ratio, function density and specific gravity of solutions.

3 Qualitative Analysis of Organic Compounds Basics of type determination, characteristic tests and classifications, reactions of different functional groups

. i. Separation of binary mixtures and analysis

ii. Elemental analysis -Detection of nitrogen, sulfur, halogen and phosphorous by Lassiagen's test.

iii. Purification techniques for organic compounds.

4. Chromatographic Techniques - Paper and Thin layer Chromatography

i. Basics of chromatography and types of chromatography

ii. Theoretical background for Paper and Thin Layer Chromatography

5. pHmetry i. pH meter and electrodes for pH measurement ii. Measurement of pH iii. Working of pH meter iv. Applications of pH meter.

CH- 203: Chemistry Practical –II

After completion of this course students should be able to

- 1. Inorganic Estimations using volumetric analysis
- 2. Synthesis of Inorganic compounds
- 3. Analysis of commercial products
- 4. Purification of organic compounds
- 5. Preparations and mechanism of reactions involved

Choice Based Credit System [CBCS] 2019 Pattern Second Year Bachelors of Science (S. Y. B. Sc.) From Academic Year 2020-21 S.Y. B.Sc. Chemistry

Programme Outcomes

After completion of Second Year Students should be able to

1. To understand basic concept/principles of Physical, Analytical, Organic and Inorganic chemistry.

2. To impart practical skills and learn basics behind experiments.

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3. To prepare background for advanced and applied studies in chemistry.

Course Outcomes S.Y. B.Sc. Chemistry Sem III

CH-301Physical and Analytical Chemistry

After completion of this course students should be able to

1. Define / Explain concept of kinetics, terms used, rate laws, molecularity, order.

2. Explain factors affecting rate of reaction.

3. Explain / discuss / derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions.

4. Determination of order of reaction by integrated rate equation method, graphical method, half-life method and differential method.

5. Explain / discuss the term energy of activation with the help of energy diagram. 6. Explanation for temperature coefficient and effect of temperature on rate constant k.

7. Derivation of Arrhenius equation and evaluation of energy of activation graphically.

8. Derivations of collision theory and transition state theory of bimolecular reaction and comparison.

9. Define / explain adsorption, classification of given processes into physical and chemical adsorption.

10. Discuss factors influencing adsorption, its characteristics, differentiates types as physisorption and Chemisorption

11. Classification of Adsorption Isotherms, to derive isotherms.

12. Explanation of adsorption results in the light of Langmuir adsorption isotherm, Freundlich's adsorption Isotherm and BET theory.

13. Apply adsorption process to real life problem.

14. Solve / discuss problems using theory.

15. Define, explain and compare meaning of accuracy and precision.

16. Apply the methods of expressing the errors in analysis from results.

17. Explain / discuss different terms related to errors in quantitative analysis.

18. Apply statistical methods to express his / her analytical results in laboratory.

19. Solve problems applying equations.

20. Explain / define different terms in volumetric analysis such as units of concentration, indicator, equivalence point, end point, standard solutions, primary and secondary standards, complexing agent, precipitating agent, oxidizing agent, reducing agent, redox indicators, acid base indicators, metallo-chrome indicators, etc.

21. Perform calculations involved in volumetric analysis.

22. Explain why indicator show color change and pH range of colour change.

23. To prepare standard solution and b. perform standardization of solutions.

24. To construct acid – base titration curves and performs choice of indicator for particular titration.

25. Explain / discuss acid-base titrations, complexometric titration / precipitation titration / redox titration.

26. Apply volumetric methods of analysis to real problem in analytical chemistry / industry

CH-302Inorganic and Organic chemistry

After completion of this course students should be able to

1. Define terms related to molecular orbital theory (AO, MO, sigma bond, pi bond, bond order, magnetic property of molecules, etc.)

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2. Explain and apply LCAO principle for the formation of MO's from AO's.

3. Explain formation of different types of MO's from AO's

. 4. Distinguish between atomic and molecular orbitals, bonding, anti-bonding and nonbonding molecular orbitals.

5. Draw and explain MO energy level diagrams for homo and hetero diatomic molecules. Explain bond order and magnetic property of molecule.

6. Explain formation and stability of molecule on the basis of bond order.

7. Apply MOT to explain bonding in diatomic molecules other than explained in syllabus.

8. Define different terms related to the coordination chemistry (double salt, coordination compounds, coordinate bond, ligand, central metal ion, complex ion, coordination number, magnetic moment, crystal field stabilization energy, types of ligand, chelate effect, etc.)

9. Explain Werner's theory of coordination compounds. Differentiate between primary and secondary valency. Correlate coordination number and structure of complex ion.

10. Apply IUPAC nomenclature to coordination compound.

11. Identify and draw the structures aromatic hydrocarbons from their names or from structure name can be assigned.

12. Explain / discuss synthesis of aromatic hydrocarbons. 3. Give the mechanism of reactions involved.

13. Explain /Discuss important reactions of aromatic hydrocarbon.

14. To correlate reagent and reactions.

15. Identify and draw the structures alkyl / aryl halides from their names or from structure name can be assigned.

16. Explain / discuss synthesis of alkyl / aryl halides.

17. Write / discuss the mechanism of Nucleophilic Substitution (SN1 , SN2 and SNi) reactions.

18. Explain /Discuss important reactions of alkyl / aryl halides.

19. To correlate reagent and reactions.

20. Identify and draw the structures alcohols / phenols from their names or from structure name can be assigned.

21. Able to differentiate between alcohols and phenols 22. Explain / discuss synthesis of alcohols / phenols.

23. Write / discuss the mechanism of various reactions involved.

24. Explain /Discuss important reactions of alcohols / phenols.

25. To correlate reagent and reactions of alcohols / phenols

26. Give synthesis of expected alcohols / phenols.

CH-303 Chemistry Practical-III

After completion of this course students should be able to

1. Verify theoretical principles experimentally.

2. Interpret the experimental data on the basis of theoretical principles.

3. Correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.

4. Understand systematic methods of identification of substance by chemical methods.

5. Write balanced equation for the chemical reactions performed in the laboratory.

6. Perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (colour change, ppt. formation, TLC).

7. Set up the apparatus / prepare the solutions - properly for the designed experiments.

8. Perform the quantitative chemical analysis of substances explain principles behind it.

9. Systematic working skill in laboratory will be imparted in student.

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Course Outcomes S.Y. B.Sc. Chemistry Sem IV CH-401 Physical and analytical Chemistry

After completion of this course students should be able to

1. Define the terms in phase equilibria such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc.

2. Explain meaning and Types of equilibrium such as true or static, metastable and unstable equilibrium. Discuss meaning of phase, component and degree of freedom.

3. Derive of phase rule. Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system.

4. Define various terms, laws, differentiate ideal and no-ideal solutions.

5. Discuss / explain thermodynamic aspects of Ideal solutions-Gibbs free energy change, Volume change, Enthalpy change and entropy change of mixing of Ideal solution.

6. Differentiate between ideal and non-ideal solutions and can apply Raoult's law.

7. Interpretation of i) vapour pressure-composition diagram ii) temperature- composition diagram.

8. Explain distillation of liquid solutions from temperature – composition diagram.

9. Explain / discuss azeotropes, Lever rule, Henrys law and its application.

10. Discuss / explain solubility of partially miscible liquids- systems with upper critical. Solution temperature, lower critical solution temperature and having both UCST and LCST. 11. Explain / discuss concept of distribution of solute amongst pair of immiscible solvents. 12. Derive distribution law and its thermodynamic proof. 13. Apply solvent extraction to separate the components of from mixture interest.

14. Solve problem by applying theory.

15. Explain / define different terms in conductometry such as electrolytic conductance, resistance, conductance, Ohm's law, cell constant, specific and equivalent conductance, molar conductance, Kohlrausch's law, etc.

16. Discuss / explain Kohlrausch's law and its Applications, Conductivity Cell, Conductivity Meter, Whetstone Bridge.

17. Explain / discuss conductometric titrations.

18. Apply conductometric methods of analysis to real problem in analytical laboratory.

19. Solve problems based on theory / equations.

20. Correlate different terms with each other and derive equations for their correlations.

21. Explain / define different terms in Colorimetry such as radiant power, transmittance, absorbance, molar, Lamberts Law, Beer's Law, molar absorptivity

22. Discuss / explain / derive Beer's law of absorptivity.

23. Explain construction and working of colorimeter.

24. Apply colorimetric methods of analysis to real problem in analytical laboratory.

25. Solve problems based on theory / equations.

26. Discuss / explain separation of ionic substances using resins.

27. Discuss / explain separation of substances using silica gel / alumina. 28. Apply column chromatographic process for real analysis in analytical laboratory.

CH-402 Inorganic and Organic Chemistry

After completion of this course students should be able to

1. Explain Isomerism in coordination complexes

2. Explain different types of isomerism in coordination complexes.

3. Apply principles of VBT to explain bonding in coordination compound of different geometries.

4. Correlate no of unpaired electrons and orbitals used for bonding.

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5. Identify / explain / discuss inner and outer orbital complexes.

6. Explain / discuss limitation of VBT

7. Explain principle of CFT.

8. Apply crystal field theory to different type of complexes (Td, Oh, Sq. Pl complexes)

9. Explain: i) strong field and weak field ligand approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong ligand field ligand concept. iii) Origin of colour of coordination complex.

10. Explain spectrochemical series, tetragonal distortion / Jahn-Teller effect in Cu(II) Oh complexes only.

11. Identify and draw the structures aldehydes and ketones from their names or from structure name can be assigned.

12. Explain / discuss synthesis of aldehydes and ketones.

13. Write / discuss the mechanism reactions aldehydes and ketones.

14. Explain /Discuss important reactions of aldehydes and ketones.

15. To correlate reagent and reactions of aldehydes and ketones

16. Perform inter conversion of functional groups.

17. Identify and draw the structures carboxylic acids and their derivatives from their names or from structure name can be assigned.

18. Explain / discuss synthesis of carboxylic acids and their derivatives.

19. Write / discuss the mechanism reactions carboxylic acids and their derivatives.

20. Explain /Discuss important reactions of carboxylic acids and their derivatives.

21. Correlate reagent and reactions of carboxylic acids and their derivatives

22. Give synthesis of expected carboxylic acids and their derivatives.

23. Identify and draw the structures amines from their names or from structure name can be assigned.

24. Explain / discuss synthesis of carboxylic amines. Write / discuss the mechanism reactions carboxylic amines.

25. Give synthesis diazonium salt from amines and reactions of diazonium salt.

26. Draw the structures of different conformations of cyclohexane.

27. Define terms such as axial hydrogen, equatorial hydrogen, confirmation, substituted cyclohexane.

28. Draw structures of different conformations of methyl / t-butyl monosubstituted cyclohexane (axial, equatorial) and 1, 2 dimethyl cyclohexane.

29. Identify cis- and trans-isomers of 1, 2 dimethyl substituted cyclohexane and able to compare their stability.

CH-403 Chemistry Practical –IV

After completion of this course students should be able to

1. Verify theoretical principles experimentally.

2. Interpret the experimental data on the basis of theoretical principles.

3. Correlate the theory to the experiments. Understand / verify theoretical principles by experiment or explain practical output with the help of theory.

4. Understand systematic methods of identification of substance by chemical methods.

5. Write balanced equation for all the chemical reactions performed in the laboratory.

6. Perform organic and inorganic synthesis and able to follow the progress of the chemical reaction.

7. Set up the apparatus properly for the designed experiments.

8. Perform the quantitative chemical analysis of substances and able to explain principles behind it.

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Choice Based Credit System [CBCS] 2019 Pattern Third Year Bachelors of Science

(T.Y. B.Sc. CHEMISTRY)

Programme Outcomes

After successful completion of three-year degree program in Chemistry student should be able to;

PO-1. Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.

PO-2. Solve the problem and also think methodically, independently and draw a logical conclusion.

PO-3. Employ critical thinking and the scientific knowledge to design, carryout, record and analyse the results of chemical reactions.

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

PO-5. Find out the green route for chemical reaction for sustainable development.

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

PO-7. Use modern techniques, decent equipment's and Chemistry software's.

Programme Specific Outcomes.

PSO-1. Gain the knowledge of Chemistry through theory and practical's.

PSO-2.To explain nomenclature, stereochemistry, structures, reactivity, and mechanism of the chemical reactions.

PSO-3. Identify chemical formulae and solve numerical problems.

PSO-4. Students will acquire knowledge how to use modern chemical tools, Models, Chem-draw, Charts and various instruments in chemical analysis.

PSO-5. Know structure-activity relationship.

PSO-6. Understand good laboratory practices and safety.

PSO-7. Develop research-oriented skills.

PSO-8.To make aware and handle the sophisticated instruments/equipment's.

PSO-9 Students will have knowledge of preparation of Various basic chemical compounds. PSO 10- Students will acquire knowledge of chemical analysis of Various organic and inorganic

Course Outcomes

chemical compounds.

B. Sc. Chemistry Semester-VI (2019 pattern)

DSEC-I:CH-501: Physical Chemistry-I

After completion of this course students should be able to

CO-1. Know historical of development of quantum mechanics in chemistry.

CO-2. Understand and explain the differences between classical and quantum mechanics. CO-3.

Understand the term specific volume, molar volume and molar refraction

CO-4 Applications to conjugated systems, zero-point energy and quantum tunnelling,

CO-5. Derive the expression for rotational spectra for the transition from J to J+1

CO-6. Classification of molecules on the basis of moment of Inertia.

CO-7. Explain the difference between Rayleigh, Stokes and anti-Stokes lines in a Raman spectrum.

Principal

DSEC-I:CH-502: Analytical Chemistry-I

After completion of this course students should be able to

CO-1. Define basic terms in gravimetry, spectrophotometry, qualitative analysis and parameters in instrumental analysis. Such as: Gravimetry, precipitation, solubility product, ionic product, common ion effect, precipitating agent, washing of ppt., drying and ignition of ppt., linearity range, detection limit, precision, accuracy, Sensitivity, Selectivity, Robustness and Ruggedness, electromagnetic radiations, spectrophotometry, Beers law, absorbance, transmittance, molar absorptivity, monochromator, wavelength of maximum absorbance.

CO-2. Explain different principles involved in the gravimetry, spectrophotometry, parameters in instrumental analysis, qualitative analysis.

CO-3. Understand the principles of Spectro-photometric analysis and properties of electromagnetic radiations.

CO-4. Study the Voltammetry and Polarography as an analytical tool.

CO-5. Perform quantitative calculations depending upon equations student has studied in the theory. Furthermore, student should able to solve problems on the basis of theory. CO-6, Differentiate / distinguish / Compare among the different analytical terms, process and analytical methods.

CO-7. Apply whatever theoretical principles he has studied in theory during practical session in laboratory.

DSEC-I:CH-503: Physical Chemistry Practical-I

After completion of this course students should be able to

CO1To determine the specific refractivity's of the given liquids A and B and their mixture and hence determine the percentage composition their mixture C.

CO-2 To determine the molecular refractivity of the given liquids A, B, CandD.

CO-3To determine the molar refraction of homologues methyl, ethyl and propyl alcohol and show the constancy contribution to the molar refraction by-CH2group.

CO-4Determine the refractive index of a series of salt solutions and determine the concentration of a salt of unknown solution CO-3 TotitrateCu2+ ions with EDTA photometrically.

CO-4 To determine the indicator constant of methyl red indicator.

CO-5 To estimate of Fe3+ ions by thiocyanate method.

CO-6 To determine Cobalt by using R-nitroso salt method.

CO-7 To determine the order of reaction for the oxidation of alcohol by potassium dichromate and potassium permanganate in acidic medium calorimetrically.

CO8Simultaneousdetermination of Cu2+ and Ni2+ ions by colorimetry/spectrophotometry method.

CO-9 Titrate of a mixture of weak acid and strong acid with strong alkali. CO-10 determine the velocity constant of hydrolysis of ethyl acetate by NaOH solution by conductimetric method.

CO-11To determine the normality of citric acid in given fruit by titrating it against standard NaOH solution by conductometric method.

CO-12 To determine $\lambda \infty$ of strong electrolyte (NaCl or KCl) and to verify Onsager equation. CO-13To estimate the amount of lead present in given solution of lead nitrate by conductometric titration with sodium sulphate.

CO14 To determine the relative strength of monochloroacetic acid and acetic acid conductometrically.

CO-15 To determine the molecular weight of a high polymer by using solutions of different concentrations.

CO16 Determine the radius of glycerol molecule from viscosity measurement. CO17 Analysis of Riboflavin from vitamin supplementary capsules / syrup / tablet sample by Photo fluro-metry.

DSEC-II:CH-504: Inorganic Chemistry-I

After completion of this course students should be able to

CO-1 Explain electroneutrality principle and different types of pi bonding.

CO-2.Able to compare the different approaches to bonding in Coordination compounds.

CO-3.To understand about inert and labile complexes and stability of complexes in aqueous solutions.

CO-4. Classification of reactions of coordination compounds

CO-5. Gain the knowledge of inorganic reaction mechanisms available in the literature to solve chemical problems.

DSEC-II:CH-505: Industrial Chemistry-I

After completion of this course students should be able to

CO-1. Know the importance of chemical industry.

CO-2. Classify various insecticides.

CO-3. Study the nutritive aspects of food constituents.

CO-4. Understand the characteristics of some food starches.

CO-5. Study the manufacture of cement, dyes, Glass, Soap and Detergents by modern methods.

CO-6. Different types of soap products.

DSEC-II:CH-506: Inorganic Chemistry Practical-I

After completion of this course students should be able to

CO-1 Estimate of Fe asFe2O3 Gravimetrically.

CO-2 Estimate of Ba asBaSO4usinghomogeneousprecipitationmethod.

CO-3 Estimate of Nickel as Ni –DMG Gravimetrically.

CO-4 Analyse of sodium bicarbonate from mixture by thermal decomposition method.

CO-5 Determine water of crystallization by thermal decomposition.

CO-6 Analyse of Food/Pharmaceutical sample for as hand sulphate dash example-Aspirin. CO-7 Prepare inorganic complexes of hexamine nickel (II)chloride,[Ni (NH3)6]Cl2.

CO-8 Prepare inorganic complexes of Potassium trioxalato ferrate (III),K3[Fe(C2O4)3].

CO-9 Prepare inorganic complexes of Manganese (III)acetylacetonate,[Mn(acac)3].

CO-10 Prepare inorganic complexes of tris(glycinato)nickelate(II),[Ni(gly)3] -

CO-11 Prepare inorganic complexes of Potassium dioxalatocuprate(II),[Cu(C2O4)2] 2-.

CO-12 Analyses Inorganic Qualitative mixtures containing borates and phosphates.

CO-13 test for iron, chloride and sulphate from pharmaceutical raw materials.

CO-14 tests of inorganic toxicants of any four ions (Borate, copper, hypochlorite or nitrate or nitrite, Sb or Bi, Iodate, H2O2)

DSEC-III:CH-507: Organic Chemistry-I

After completion of this course students should be able to

CO-1.Polynuclear and Heteronuclear Aromatic Compounds: After studying the polynuclear and heteronuclear aromatic compounds, students will able to define and classify polynuclear and heteronuclear aromatic hydrocarbons, write the structure, synthesis of polynuclear and heteronuclear aromatic hydrocarbons.

CO-2. Meaning of active methylene group.

CO-3. Understand stereochemistry by using models and learn reactivity of geometrical isomers

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CO-4. Compare between E1 and E2 reactions.

CO-5. Understand the evidences, reactivity and mechanism of various elimination and substitution reactions CO-6. Hoffmann and Saytzeff's Orientation.

CO-7. Effect of factors on the rate elimination reactions

DSEC-III:CH-508: Chemistry of Biomolecules

After completion of this course students should be able to

CO-1. The student will be understanding of Cell types, Difference between a bacterial cell, Plant cell and animal cell. Biological composition and organization of cell membrane, structure and function of various cell organelles of plant and animal cell.Concepts of biomolecules, Bonds that link monomeric units to form macromolecules.

CO-2. The student will understand the types of carbohydrates and their biochemical significance in living organisms, structure of carbohydrates and reactions of carbohydrates with Glucose as example. Properties of carbohydrates.

CO-3. The student needs to know the types of lipids with examples, structure of lipids, properties of lipids.

CO-4. The student will understand the structure and types of amino acids. Reactions of amino acids.Properties of amino acids.Peptide bond formation.Types of proteins.Structural features in proteins.Effect of pH on structure of amino acid, Determination of N and C terminus of peptide chain.

CO-5The student know the classes of enzymes with subclasses and examples. Enzyme specificity, Equations of enzyme kinetics Km and its significance, features of various types of enzyme inhibitions, industrial applications of enzymes.

CO-6.Basic concepts of Endocrinology.Types of Endocrine glands and their hormones.Biochemical nature of hormones. Mechanism of action of lipophilic and hydrophilic hormones

DSEC-III:CH-509: Organic Chemistry Practical-I

After completion of this course students should be able to

A) Separation of Binary Mixtures and Qualitative Analysis The students will be able to

CO-1 Perform the quantitative chemical analysis of binary mixture, explain principles behind it.

CO-2 Separate, purify and analyse binary water insoluble mixture.

CO-3 Separate, purify and analyse binary water-soluble mixture. CO-4 Understand the techniques involving drying and recrystallization by various method.

CO-5 Familiarize the test involving identification of special elements.

CO-6 Learn the confirmatory test for various functional groups.

B) Preparations The students will be able to

CO-1 Systematic working skill in laboratory will be imparted in student.

CO-2Learnthebasicprinciplesofgreenandsustainablechemistry.

CO-3 Synthesis of various organic compounds through greener approach.

CO-4 Do and understand stoichiometric calculations and corelate the green process metrics. CO-5 Learn alternative solvent media and energy sources for chemical processes.

CO-6 Learn the preparations of derivative various functional groups aspects of electrical experiments.

CO-7 Understand the techniques involving drying and recrystallization by various method.CO-8 Expertise the various techniques of preparation and analysis of organic substances.CO-9 Understand principle of Thin Layer Chromatographic techniques.

CO-10 Understand the purification technique used in organic chemistry.

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SEC-I:CH-510: Skills Enhancing Course-I

CH-510 (A): Introduction to Medicinal Chemistry.

After completion of this course students should be able to

CO-1. The basics of medicinal chemistry, biophysical properties, overview of basic concepts of traditional systems of medicine

CO-2. Over view of the overall process of drug discovery, and the role played by medicinal chemistry in this process.

CO-3. Biological activity parameters and importance of stereochemistry of drugs and receptors.

CO-4.Knowledge of mechanism of action of drugs belonging to the classes of infectious and noninfectious diseases.

CO-5. Enhancement of practical skills in synthesis, purification and analysis

SEC-II:CH-511: Skills Enhancing Course-II

CH-511(A): Environmental Chemistry

After completion of this course students should be able to

CO-1.Importance and conservation of environment.

CO-2. Importance of biogeochemical cycles

CO-3 Students should know i. Water resources ii. Hydrological Cycle iii. Organic and inorganic pollutants iv. Water quality parameters.

CO-4.Water pollutants, Eutrophication, Waste water treatment (domestic waste water, aerobic treatment, anaerobic treatment, up flow aerobic sludge bed, industrial waste water treatment, drinking water supplies, Trace elements in water, chemical speciation.

Course Outcomes B. Sc. Chemistry Semester-VI (2019 pattern) DSEC-IV:CH-601: Physical Chemistry-II

After completion of this course students should be able to

CO-1.photochemical laws: Grothus - Draper law, Stark-Einstein law,

CO-2. Photochemical reactions: photosynthesis, photolysis, photocatalysis, photosensitization

CO-3. Various photochemical phenomena like fluorescence and phosphorescence, Chemiluminescence.

CO-4. Electrochemical cells: Explanation of Daniell cell, Conventions to represent electrochemical cells

CO-5. Types of concentration cells: Concentration cells without and with transference Concentration cells with liquid junction potential.

CO-6. Fuel Cells: Types of fuel cells, advantages, disadvantages of these fuels' cells, comparison of battery Vs fuel cell

CO-7. Methods of Crystal structure analysis: The Laue method and Bragg's method: Derivation of Bragg's equation.

CO-8. Detection and Measurement of Radioactivity: Cloud chamber, Ionization Chamber, Geiger-Muller Counter, Scintillation Counter, Film Badges.

DSEC-IV:CH-602: Physical Chemistry-III

After completion of this course students should be able to

CO-1. Meaning of the terms-Solution, electrolytes, nonelectrolytes and colligative properties CO-2.Lowering of vapour pressure of solvent in solution.

CO-3.Application of colligative properties to determine molecular weight of nonelectrolyte, abnormal molecular weight.

CO-4.Relation between Vant Hoff's factor and degree of dissociation of electrolyte by colligative property.

CO-5.Factors affecting on solid state reactions.

CO-6. Rate laws for reactions in solid state.

CO-7. Applying rate laws for solid state reactions.

CO-8. Cohesive Energy of ionic crystals based on coulomb's law and Born Haber Cycle

CO-9. Correspondence between energy levels in the atom and energy bands in solid

CO-10.Conductors and insulators – Its correlation with Extent of energy in energy bands CO-11. Semiconductors – Role of impurity in transformation of insulator into semiconductor CO-12. Chemical bonding & Molecular forces in Polymer

CO-13.Practical significance of polymer molecular weights.

DSEC-IV:CH-603: Physical Chemistry Practical-II

After completion of this course students should be able to

1) To determine the PKa value of given monobasic weak acid by potentiometric titration.

2) To determine the formal redox potential of Fe2+/Fe3+ system potentiometrically.

3) To determine the amount of NaCl in the given solution by potentiometric titration against silver nitrate.

4) To determine the solubility product and solubility of AgClpotentiometrically using chemical cell.

5) Estimate the amount of Cl-, Br- and I-in given unknown halide mixture by titrating it against standard AgNO3 solution (mixture of any two ions).

6) To prepare standard 0.2 M Na2HPO4 and 0.1 M Citric acid solution, hence prepare four different buffer solutions using them. Determine the pH value of these and unknown solution.

7) To determine the composition of Zinc ferrocyanide complex potentiometrically. 8) To determine the standard electrode potentials of Cu and Ag electrodes and to determine the EMF of a concentration cell.

9) To determine the degree of hydrolysis of aniline hydrochloride.

10) To determine the dissociation constant of oxalic acid by pH-metric titration with strong base.

11) Determination of Pka of given weak acid by pH metry titration with strong base 12) To determine the acid and base dissociation constant of an amino acid and hence the isoelectric point of an acid.

13) pH metric titration of strong acid against strong base by pH measurement and hence determine the concentration and strength of strong acid.

14) To determine plateau voltage of the given G M counter.

15) To determine the molecular weight of solute by depression in freezing point method

16) To study the association of Benzoic acid in benzene by Beckmann Method

17) Determine the molecular weight of given electrolyte and non-electrolyte by Landsberger's method and to study the abnormal molecular weight of electrolyte

18) Determination of SO42- and Cl- by turbidimetric method (turbidimetric titration or calibration curve method)

19) To determine the molecular weight of a given polymer by turbidometry.

DSEC-V:CH-604: Inorganic Chemistry –II

After completion of this course students should be able to

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CO-1. To know trends in periodic properties of these elements w.r.t. size of atom and ions, reactivity, catalytic activity, oxidation state, complex formation ability, colour, magnetic properties, nonstoichiometry, density, melting point, boiling point.

CO-2.The meaning of term f-block elements, Inner transition elements, lanthanides, actinides.

CO-3.Lanthanide contraction and effects of lanthanide contraction on post-lanthanides.

CO-4.The meaning of metal & semiconductor.

CO-5. Explain the effect of temperature and impurity on conductivity of metals and semiconductors.

DSEC-V:CH-605: Inorganic Chemistry-III

After completion of this course students should be able to

CO-1. To understand M-C bond and to define organometallic compounds

CO-2. To understand the structure and bonding using valence electron count (18 ele. rule) CO-3. Define and differentiate homogeneous and heterogeneous catalysis.

CO-4. Understand the essential properties of homogeneous catalysts-Give the catalytic reactions for Wilkinson's Catalysis, hydroformylation reaction, Monsanto acetic acid synthesis, Heck reaction.

CO-5. Identify the biological role of inorganic ions & compounds.

DSEC-V:CH-606: Inorganic Chemistry Practical-II

After completion of this course students should be able to

1. Analyze of Phosphate (PO4 3-) from Fertilizer.

- 2. Analyze of Iodine from Iodized salt.
- 3. Determine Strength of medicinal H2O2.

4. Analyze of Calcium from milk powder.

5. Analyze of Cu from Cu-Fungicide.

6. Estimate of Na by flame photometry by calibration curve method.

7. Estimation of K by flame photometry by regression method.

8. Purification of water using cation/anion exchange resin and analysis by qualitative analysis /conductometry.

9. Synthesize of Silver nano-particles.

10. Synthesize of ZnO nanoparticles.

11. Verify of periodic trends using solubility of alkaline earth metal hydroxides Ca(OH)2, Mg(OH)2,Cr(OH)2, Ba(OH)2.

12. Synthesize of amine complexes of Ni(II) and its ligand exchange reaction (bidentate ligands like acac, DMG, Glycine) by substitution method.

DSEC-VI:CH-607: Organic Chemistry-II

After completion of this course students should be able to

CO-1. Students will learn the principle of mass spectroscopy, its instrumentation and nature of mass spectrum.

CO-2. Students will understand the principle of UV spectroscopy and the nature of UV spectrum. They will learn types of electronic excitations.

CO-3. Students will understand the principle of NMR spectroscopy and will understand various terms used in NMR spectroscopy. They will learn measurement of chemical shift and coupling constants.

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CO-4. Students will be able to determine the structure of simple organic compounds on the basis of spectral data such as λ max values, IR frequencies, chemical shift (δ values). CO-5.The use of models to draw different types of disubstituted cyclo hexanes in chair form.

DSEC-VI:CH-608: Organic Chemistry-III

After completion of this course students should be able to

CO-1. Students will learn different terms used – Disconnection, Synthons, Synthetic equivalence, FGI, TM. One group disconnection, Retrosynthesis and Synthesis of target molecules: Acetophenone, Crotonaldehyde, Cyclohexene, Benzyl benzoate, and Benzyl diethyl malonate.

CO-2. Chemistry of reactive intermediates (carbocations, carbanions, free radicals, carbenes, nitrenes, benzynes etc...)

CO-3.Functional group interconversions and structural problems using chemical reactions.CO-4.Preparation and Applications of oxidising and reducing reagents.

CO-5. Students will learn extraction, Purification, Some examples of alkaloids and their natural resources. Ephedrine- structure determination using chemical methods, Synthesis of Ephedrine by Nagai

DSEC-VI:CH-609: Organic Chemistry Practical-II

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After completion of this course students should be able to

A) Interpretations of IR and PMR Spectra The students will be able to

1. Explain "fingerprint region" of an infrared spectrum can used in the identification of an unknown compound.

2. Identify the functional group or groups presenting a compound.

3. Identify the broad regions of the infrared spectrum in which occur absorptions caused by N-H,C-H, and O-H, C=C and C=N, C=O, C=N, and C=C.

4. Understand use NMR spectra to determine the structures of compounds.

5. Interpret integration of NMR spectra

6. Calculate coupling constants from 1-HNMR spectra.

7. Interpret elemental analysis technique

B) Organic Estimations The students will be able to

1. Practical knowledge of handling chemicals.

2. Achieve the practical skills required to estimations of glucose and glycine.

3. Achieve the practical skills required to Saponification value of oil.

4. Determine the molecular weight of given tribasic acids.

C) Organic Extractions The students will be able to

1. Apply the principles of extraction

2. Understand the equipment for extraction.

3. Gain practical hands-on experience of modern Extraction

. 4. Developbasicdesign of extractor

5. Describe the extraction separation process.

D) Column chromatography The students will be able to

1. Defines the basic parameters in chromatography

2. Explain the processes of a chromatography analysis.

3. Describes the types and materials of column.

4. Explains the types of mobile phase and elution.

5. Realize the selection of appropriate mobile phase, column and detector.

SEC-III:CH-610: Skill Enhancing Course-III

.CH-610(A): Chemistry of Soil and Agrochemicals Course Outcomes:

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After studying this course, student is expected to

1) Understoodvarious components of soil and soil properties and their impact on plant growth.

2) Understood the classification of the soil.

3) Explores the problems and potentials of soil and decide the most appropriate treatment for land use.

4) Understood the Reclamation and management of soil physical and chemical constraints.

5) Useful in making decisions on nutrient dose, choice of fertilizers and method of application etc. Practiced in crop production.

6) Got experience on advanced analytical and instrumentation methods in the estimation of soil.

7) Understood various Nutrient management concepts and Nutrient use efficiencies of major and micro nutrients and enhancement techniques.

8) Proper understanding of chemistry of pesticides will be inculcated among the students.

9) Imparts knowledge on different pesticides, their nature and, mode of action and their fate in soil so as to monitor their effect on the environment.

SEC-IV:CH-611: Skill Enhancing Course-IV CH-611(A): Analytical Chemistry-II

After studying this course, student is expected to

CO-1. Know the different analytical techniques.

CO-2.To understand different types of separation techniques.

CO-3.To study principle, construction and working of GC and HPLC.

CO-4. To give an extended knowledge about chromatographic techniques used for separation of amino acids.

CO-5. Discuss the problem based on distribution coefficient and extraction techniques.

CO-6. Identify important parameters in analytical processes or estimations. Example: minimum analyte concentration in particular method, reagent concentration for particular analysis, reagent for particular analysis, reaction condition to convert analyte into measurable form, wavelength selection in HPLC with spectrophotometric and fluorometric detector, solvent or carrier gas in HPLC and GC, choice method for the sample preparation in atomic spectroscopic methods, choice of filter and HCL in atomic spectroscopic methods. CO-7. Explain different principles involved in the analyses using solvent extraction, basics of instrumental chromatography, HPLC, GC, and atomic spectroscopic techniques.

CO-8. Perform quantitative calculations depending upon equations students has studied in the theory. Furthermore, student should able to solve problems on the basis of theory.

CO-9. Select particular method of analysis if analyte sample is given to him. Differentiate / distinguish / compare among the different analytical terms, process and analytical methods.

DEPARTMENT OF PHYSICS

PROGRAMME SPECIFIC OUTCOMES (PSO):

PSO1: Students are expected to acquire a core knowledge in physics, including the major premises of classical mechanics, quantum mechanics, electromagnetic theory, electronics, optics, special theory of relativity and modern physics.

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PSO2: Students are also expected to develop written and oral communication skills in communicating physics-related topics.

PSO3: Students should learn how to design and conduct an experiment (or series of experiments) demonstrating their understanding of the scientific method and processes. Not only that they are expected to have an understanding of the analytical methods required to interpret and analyze results and draw conclusions as supported by their data.

PSO4: Students will develop the proficiency in the acquisition of data using a variety of laboratory instruments and in the analysis and interpretation of such data.

PSO5: Students will learn the applications of numerical techniques for modelling physical systems for which analytical methods are inappropriate or of limited utility.

PSO6: Students will realize and develop an understanding of the impact of physics and science on society.

PSO7: Apply conceptual understanding of the physics to general real-world situations.

PSO8: Describe the methodology of science and the relationship between observation and theory.

PSO9: Learn to minimize contributing variables and recognize the limitations of equipment.

PSO10: Discover of physics concepts in other disciplines such as mathematics, computer science, engineering, and chemistry.

PSO11: Develop the following experimental tools: Numerically model simple physical systems using Euler's method, curve fitting, and error analysis.

PSO12: Analyze physical problems and develop correct solutions using natural laws

Course Outcomes

Mechanics (PHY-111)

On successful completion of this course students will be able to do the following:

1. Demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems.

2. Use the free body diagrams to analyse the forces on the object.

3. Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them.

4. Understand the concepts of elasticity and be able to perform calculations using them.

5. Understand the concepts of surface tension and viscosity and be able to perform calculations using them.

6. Use of Bernoulli's theorem in real life problems.

7. Demonstrate quantitative problem solving skills in all the topics covered

Physics Principles and Applications (PHY-112)

On successful completion of this course students will be able to do the following:

1. To understand the general structure of atom, spectrum of hydrogen atom.

2. To understand the atomic excitation and LASER principles.

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3. To understand the bonding mechanism and its different types.

4. To demonstrate an understanding of electromagnetic waves and its spectrum.

5. Understand the types and sources of electromagnetic waves and applications.

6. To demonstrate quantitative problem solving skills in all the topics covered.

Heat and Thermodynamics (PHY-121)

After successfully completing this course, the student will be able to do the following:

1. Describe the properties of and relationships between the thermodynamic properties of a pure substance.

2. Describe the ideal gas equation and its limitations.

3. Describe the real gas equation.

4. Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.

5. Analyse the heat engines and calculate thermal efficiency.

6. Analyse the refrigerators, heat pumps and calculate coefficient of performance.

7. Understand property 'entropy' and derive some thermo dynamical relations using entropy concept

. 8. Understand the types of thermometers and their usage.

Electricity and Magnetism (PHY-122)

On successful completion of this course students will be able to do the following:

1) To understand the concept of the electric force, electric field and electric potential for stationary charges.

2) Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law.

3) To understand the dielectric phenomenon and effect of electric field on dielectric.

4) To Study magnetic field for steady currents using Biot-Savart and Ampere's Circuital laws.

5) To study magnetic materials and its properties.

6) Demonstrate quantitative problem solving skills in all the topics covered.

Physics paper III: Practical (PHY 123)

After successfully completing this laboratory course, the students will be able to do the following:

1. Acquire technical and manipulative skills in using laboratory equipment, tools, and materials.

2. Demonstrate an ability to collect data through observation and/or experimentation and interpreting data.

3. Demonstrate an understanding of laboratory procedures including safety, and scientific methods.

4. Demonstrate a deeper understanding of abstract concepts and theories gained by experiencing and visualizing them as authentic phenomena.

5. Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.

Mathematical Methods in Physics (Phy 231)

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

Principal) Nutan Art's College, Rajapur Tal. Sangamner, Dist. Ahmednagar

- Understand the complex algebra useful in physics courses.
- Understand the concept of partial differentiation.
- Understand the role of partial differential equations in physics.
- Understand vector algebra useful in mathematics and physics.
- Understand the concept of singular points of differential equations.

Practical Course I (Phy 233)

After completing this practical course students will be able to

- Use various instruments and equipment.
- Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
 Investigate the theoretical background of an experiment.
- Setup experimental equipment to implement an experimental approach.
- Analyse the data, plot appropriate graphs and reach conclusions from data analysis.
- Work in a group to plan, implement and report on a project/experiment.
- Keep a well-maintained and instructive laboratory logbook

Oscillations, waves and Sound (Phy 241)

On completion of this course, the learner will be able:

- To study underlying principles of oscillations and it's scope in development.
- To understand and solve the equations / graphical representations of motion for simple harmonic, damped, forced oscillators and waves.
- To explain oscillations in terms of energy exchange with various practical applications.
- To solve numerical problems related to undamped, damped, forced oscillations and superposition of oscillations.
- To study characteristics of sound, decibel scales and applications.

Optics (Phy 242)

On successful completion of this course the students will be able to

- Acquire the basic concept of wave optics.
- Describe how light can constructively and destructively interfere.
- Explain why a light beam spread out after passing through an aperture
- Summarize the polarization characteristics of electromagnetic wave
- Understand the operation of many modern optical devices that utilize wave optics
- Understand optical phenomenon such polarization, diffraction and interference in terms of the wave model
- Analyze simple example of interference and diffraction.

Practical Course II (Phy 243)

After completing this practical course students will be able to

- Use various instruments and equipment.
- Design experiments to test a hypothesis and/or determine the value of an unknown quantity.
- Investigate the theoretical background of an experiment
- Setup experimental equipment to implement an experimental approach.
- Analyse the data, plot appropriate graphs and reach conclusions from data analysis.
- Work in a group to plan, implement and report on a project/experiment.
- Keep a well-maintained and instructive laboratory logbook.

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DEPARTMENT OF BOTANY

PROGRAMME SPECIFICAT OUT COMES (PSO)

PSO1. To foster curiosity in the students for Botany

PSO2. To create awareness amongst students for basic and applied areas in botany

PSO3. To orient students about the importance of abiotic and biotic factors of environment and its conservation.

PSO4. To provide an insight to the aspects in plant biodiversity.

POS5. To inculcate good laboratory practices in students and to provide training in instrument handling and technical support.

POS6. To understand the plant diversity in the area

PSO7. To understand the underlying principles in classification of plants

PSO8. To understand the terminology needed in classification

PSO9. To understand the differences and similarities in various aspects of classifications

PSO10. To classify plant kingdom based on various morphological characteristic

s PSO11. To understand our role as caretaker and promoter of life

PSO12. To understand the origin and advancement of higher plants

PSO13. To understand general characters of different families in higher plants

PSO14. To classify plants and to make able to identify and describe various plant families

PSO15. To understand different behaviours and adaptations in higher and lower plants.

PSO16. To understand affinities and phylogenetic relationship among advanced and primitive plant families

PSO17. To provide thorough knowledge about plant growth, physiological processes etc.

PSO18. To make the students aware about application of botany in various disciplines

PSO19. To highlight the potential of various applied branches of botany to becomeentrepreneurs

PSO20. To equip the students with skills related to laboratory as well as field based studies

PSO21. To make the students aware about conservation and sustainable use of biodiversity

PSO22. To inculcate interest and foundation for further studies in botany

PSO23. To address the socio-economical challenges related to plant sciences.

Course Outcomes

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CO1. Critically evaluation of ideas and arguments by collection relevant information about the plants, so as recognize the position of plant in the broad classification and phylogenetic level.

CO2. Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.

CO3. Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.

CO4. Students will be able to apply the scientific method to questions in botany by formulating testable hypotheses, collecting data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports their hypotheses.

CO5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.

CO6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.

CO7. Students will be able to apply fundamental mathematical tools (statistics, calculus) and physical principles (physics, chemistry) to the analysis of relevant biological situations.

CO8. Students will be able to identify the major groups of organisms with an emphasis on plants and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.

CO9. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and life history.

CO10. Students will be able to explain how Plants function at the level of the gene, genome, cell, tissue, Flower development. Drawing upon this knowledge, they will be able to give specific examples of the physiological adaptations, development, reproduction and mode of life cycle followed by different forms of plants.

CO11. Students will be able to explain the ecological inter connectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.

CO12. Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within biology

Class – F.Y. B.Sc. Paper I – Plant Diversity and Morphology and Anatomy.

On completion of the course, students are able to:

1. Understand the diversity of Algae, Fungi, Bryophytes, Lichens, Pteridophytes& Gymnosperms.

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2. Know the systematic, morphology and structure of Algae, Fungi, Bryophytes, Lichens, Pteridophytes and Gymnosperms.

3. Understand the life cycle pattern of Algae, Fungi, Bryophytes, Lichens, Pteridophytes and Gymnosperms.

4. Know importance and scope of plant Anatomy.

5. Understand the Anatomical and morphological features of Plants.

6. Understand the habit of the angiosperm plant body. 7. Know the vegetative characteristics of the plant.

8. Learn about the reproductive characteristics of the plant.

9. Understand the plant morphology and basic taxonomy.

Class – F.Y.B.Sc. Paper II – Industrial Botany I and II.

On completion of the course, students are able to:

1. Understand the economic importance of the Plants.

2. Become aware of applications of different plants in various industries.

3. To highlight the potential of these studies to become an entrepreneur.

4. To equip the students with skills related to laboratory as well as industries based studies

5. Understand the role plants in human welfare.

6. Gain knowledge about various plants of economic use.

7. Know importance of plants & plant products.

8. Understand the chemical contents of the plant products.

9. Know about the utility of plant resources.

Class – S.Y.B.Sc.Semester I Paper I – Fundamentals of Plant systematic and Plant Ecology

On completion of the course, students are able to:

1. Know the scope and importance of the discipline.

2. Understand plant communities and ecological adaptations in plants

3. Know the concept of methodology in taxonomy.

4. Learn about conservation of biodiversity, Non-conventional Energy and Pollution.

5. Discover botanical regions of India and vegetation types of Maharashtra.

6. Know the conceptual development of taxonomy and systematic.

7. Understand the Phylogeny of angiosperms - A general account of the origin of Angiosperms.

8. Learn about the characters of biologically important families of angiosperms.

9. Know the floral variations in angiospermic families, their phylogeny and evolution.

10. Understand various rules, principles and recommendations of plant nomenclature produces in plant identification.

11. Understand major evolutionary trends in various parts of angiospermic plants.

Class – S.Y.B.Sc. Semester | Paper II – Plant Physiology.

On completion of the course, students are able to: 1. Know importance and scope of plant physiology.

2. Understand the plants and plant cells in relation to water.

3. Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways.

4. Understand the respiration in higher plants with particular emphasis on aerobic and anaerobic respiration.

5. Learn about the movement of sap and absorption of water in plant body. 6. Understand the plant movements.

7. Learn and understand about mineral nutrition in plants.

8. Understand the growth and developmental processes in plants.

9. Know about Photosynthesis and Respiration in plants.

10. Understand the process of translocation of solutes in plants.

11. Know the nitrogen metabolism and its importance.

Class – S.Y.B.Sc.Semester II Paper I – Plant Anatomy and Embryology.

On completion of the course, students are able to:

1. Know the scope and importance of the discipline.

2. Understand the Anatomical features of Plants.

3. Understand major evolutionary trends in various parts of angiospermic plants.

4. Know the methods of pollination and fertilization.

5. Know fertilization, endosperm and embryogeney.

6. Understand the scope & importance of Anatomy.

7. Know various tissue systems.

8. Understand the normal and anomalous secondary growth in plants and their causes.

9. Perform the techniques in anatomy.

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Class – S.Y.B.Sc. Semester II Paper II – Plant Biotechnology.

On completion of the course, students are able to Understand:

1. Know about the genomic organization or living organisms, study of genes genome, chromosome etc

. 2. Gain knowledge about the mechanism and essential component required for prokaryotic DNA replication.

3. Understand the fundamentals of Recombinant DNA Technology.

4. Know about the Genetic Engineering.

5. Understand the principle and basic protocols for Plant Tissue Culture.

6. The concept of operon and its structure and regulation.

T.Y.B.Sc. COURSE OUTCOME (CO) (SEM I & II) COURSE TITLE: CRYPTOGAMIC BOTANY

CO1. The learner will get acquainted with life cycles of lower and higher cryptogams

CO2. The students will understand details and applications of algae, fungi, bryophytes and pteridophytes.

CO3. The learner of the course will have an understanding of the phylogenetic relationship and role in human welfare.

COURSE TITLE: CELL AND MOLECULAR BIOLOGY

CO1. Organisation of cell its history and type of cells: prokaryotic and eukaryotic

CO2. Physical and chemical nature of cell matrix

CO3. Plant cell cytoplasmic constituents, cell organalles and their structure and function

CO4. Learner will be acquainted with nuclear organization and chromosome structures, types and functions.

CO5. The student will understand central Dogma of molecular biology, and various process involved in it

. CO6. Learner will be acquire knowledge related to genetic material, its nature, forms, various structure models and laws.

CO7. Learners will be enlightened with DNA replication, experiments invoeld in providing it and its mechanism, DNA damage and repair.

CO8. Students will also learn about gene organization, transcription, genetic code and translation, gene activation and regulation.

COURSE TITLE: GENETICS AND EVOLUTION

CO1. Students will learn about concept of heredity and variation along with various branches and application of genetics CO2. Learners will have basic information and understanding about Mendelism, terminology involved and various laws involved.

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CO3. The students will make an understanding about interactions involved in genes Multiple allele using Nicotiana and Drosphila as model organism.

CO4. The learner of this course will have an understanding of quantitative and cytoplasmic inheritance and sex linked inheritance with reference to Drosophila

CO5. The student will learn about ploidy specifically euploidy and aneuploidy. They will be acquainted with chromosomal aberrations.

CO6. The students of the course will be introduced to theories of evolution Darwinism and Lamarckian and modern synthetic theory.

CO7. Students will be well versed with evidences of evolution and population genetics and evolution.

COURSE TITLE: SPERMATOPHYTA AND PALAEOBOTANY

CO1. The learner will understand gymnosperms and angiosperms in details with classification, origin and study of angiosperm families

CO2. The student will be able to identify the plants based on various keys like Latin diagnosis, bracketed keys and also will be able to prepare artificial keys.

CO3. The students will understand importance of learning paleobotany, this will help in comparing the present day plants with primitive fossil plants.

COURSE TITLE: HORTICULTURE AND FLORICULTURE

CO1. The students will be made aware about the introduction, importance and application of horticulture and floriculture.

CO2. The learner of the course will be acquainted with nutritive values of the horticultural important fruits and vegetables.

CO3. The Students will learn and understand various methods of plant propagation in horticultural plants with special practices involved like training and pruning.

CO4. The learner of the course will be able to understand the production technology involved in fruits and vegetables. CO5. The students will be introduced to ornamental horticulture, its origin and history. Gardens of India, various styles and concept of floriculture its scope and importance.

CO6. The learner will be understating flower industry so as to create an interest to become an entrepreneur.

COURSE TITLE: COMPUTATIONAL BOTANY

CO1. The students of the course will be introduced to biostatistics, its scope and application.

CO2. The learner will be made acquainted with sample and sampling methods used in biostatistics.

CO3. The students will be made available about knowledge on collection and representation of data.

CO4. The learners will be made understand measures of central tendency and dispersion.

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CO5. The students will understand correlation and regression, probability and types of theoretical probability distribution.

CO6. The learners of the course will understand the tests of significance of mean, computation of seed testing and plant growth indices.

CO7. The learners will understand the analysis of data on vegetation studies.

COURSE TITLE: PLANT PHYSIOLOGY AND BIOCHEMISTRY

CO1. The learner of the course will understand details on plant physiology, photosynthesis, and different pathways. CO2. The students will have knowledge on respiration, structure of mitochondrion, and various cycles involved like glycolysis, TCA, ETS and ATP synthesis.

CO3. The learners will understand translocation of organic solutes, and stress physiology.

CO4. The learners of the course will be made available knowledge on carbohydrates, amino acids, proteins, lipids.

CO5. The students will understand definition and nature of enzymes and properties of enzymes.

CO6. The students will be acquainted with definition and types of secondary metabolites and will understand production of secondary metabolites via mevalonic and shikimic acid pathways

COURSE TITLE: PLANT ECOLOGY AND BIODIVERSITY

CO1. The learner of the course will have an interrelationship between the living world and environment.

CO2. The learners will understand environmental crisis, environmental impact assessment and environmental audit so as to know the responsibility.

CO3. The students of the course will also be acquainted with ecology and economics and remote sensing.

CO4. The students of the course will also be well versed with introduction of biodiversity, its aim, concept and objectives.

CO5. The learners of the course will be taught about characterization of biodiversity, by virtue of which they can understand the concept of endemism and phytogeography.

CO6. The students will be well versed with biodiversity loss, importance, IUCN categories and inventorying and monitoring of biodiversity.

CO7. The students of the course will understand current practices in conservation including in situ, ex situ and social approach to biodiversity conservation

COURSE TITLE: PLANT PATHOLOGY

CO1. The learners will be made acquainted with fundamentals of plant pathology, and important terminologies and significance.

CO2. The students will be having a wide exposure to various institutes working on such area, concept of disease cycle, disease development and its mechanism.

Principal

CO3. The students will be made versed with methods of studying plant diseases, fungal, bacterial, mycoplasma, nematodal, viral plant disease, non parasitic diseases.

CO4. The course will provide insights in principles of plant disease control and molecular diagnostics and transgenic in crop protection.

COURSE TITLE: MEDICINAL AND ECONOMIC BOTANY

CO1. The students will be introduced to pharmacognosy its origin history and scope.

CO2. The learner will be introduced to ayurvedic pharmacy, tridosha concept, ayurvedic principles and formulations CO3. The students will be made understand analytical medicinal botany along with cultivation, collection and processing of herbal drugs from menthe and eucalyptus.

CO4. The course will also help the students to study the drugs w.r.t. occurrence distribution and cultivation, microscopic characters and constituents.

CO5. The learner of the course will have a in depth knowledge on applied medicinal botany, concepts of major metabolic pathway, ethnobotany.

CO6. The students will be made well versed with economic botany, its scopes and NWFPs with origin evolution source and uses of economically importance botanicals.

COURSE TITLE: PLANT BIOTECHNOLOGY

CO1. The learner of the study will be introduced to biotechnology its history.

CO2. The students will be introduced to brief history and importance of plant tissue culture and its application

CO3. The learner of the course will be introduced to germplasm and cryopreservation strategies.

CO4. The students will be made available with information on transgenic plants as bioreactors.

CO5. The learners of the course will be taught about non symbiotic nitrogen fixation, biological nitrogen fixation.

CO6. The students will be made versed with biotechnology and society.

CO7. The students will be introduced to bioinformatics and its scope and use in plant science. They will also be taught its application.

CO8. The learners will be introduces to methods, types, concepts and applications of genomics and proteomics.

COURSE TITLE: PLANT BREEDING AND SEED TECHNOLOGY

CO1. The learner of the course will understand the scope and importance of plant breeding.

CO2. The student will be introduced to conventional techniques, methods and practices in breeding.

CO3. The students will be taught alternative breeding techniques, breeding for stress tolerance.

Principal Nutan Art's College, Rajapur Tal. Sangamner, Dist. Ahmednagar

CO4. The students will be introduced to seed technology, stages of seed production and role of seed technology.

CO5. The learner of the course will be made understand seed certification, seed processing and seed sampling, storage and packaging.

CO6. The students will understand purity analysis of seeds, seed testing and seed marketing

Department of zoology

Department of zoology

PROGRAMME SPECIFIC OUTCOMES (PSO)

PSO1.To foster curiosity in the students for Zoology.

PSO2.To create awareness amongst students for the basic and applied areas of Zoology. PSO3.

To orient students about the importance of abiotic and biotic factors of environmentand their conservation.

PSO4.To provide an insight to the aspects of animal diversity.

PSO5.To inculcate good laboratory practices in students and to train them about proper handling of lab instruments. PSO6. To understand the Animal diversity around us.

PSO7. To understand the underlying principles of classification of animals.

PSO8. To understand the terminology needed in classification.

PSO9. To understand the differences and similarities in the various aspects of classification.

PSO10. To classify invertebrates and to be able to understand the possible group of the invertebrate observed in nature. PSO11. To understand our role as a caretaker and promoter of life.

PSO 12.To understand the origin and advancement of higher vertebrates (tetrapoda).

PSO 13.To understandgeneral characters of different groups of higher vertebrates.

PSO 14. To classify vertebrates and to become able to understand the possible group of vertebrates observed in nature. PSO15. To understand different behaviours and adaptations in higher vertebrates

PSO16. To understand affinities among different groups of higher vertebrates.

PSO17. To provide thorough knowledge about various animal sciences from primitive to highly evolved animal groups. PSO 18.To make the students aware of applications of Zoology subject in various industries.

PSO19 .To highlight the potential of various branches of Zoology to become an entrepreneur.

PSO 20. To equip the students with skills related to laboratory as well as field based studies.

PSO 21.To make the students aware about conservation and sustainable use of biodiversity.

Radlay

PSO 22.To inculcate interest and foundation for further studies in Zoology.

PSO 23. To address the socio-economical challenges related to animal sciences

F.Y.B.Sc. COURSE OUTCOMES (CO) (Sem. I and II): COURSE TITLE: ANIMAL DIVERSITY -I & II

CO1. The student will be able to understand classify and identify the diversity of animals.

CO 2. The student understands the importance of classification of animals and classifies them effectively using the six levels of classification.

CO 3. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

COURSE TITLE: ANIMAL ECOLOGY

CO1. The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.

CO 2.To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature. CO3.The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.

CO4. The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components.

CO 5. The working in nature to save environment will help development of leadership skills to promote betterment of environment.

TITLE: CELL BIOLOGY COURSE

CO1. Learning outcomes for Cell Biology.

CO2. The learner will understand the importance of cell as a structural and functional unit of life.

CO3.The learner understands and compares between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development.

CO4.The dynamism of bio membranes indicates the dynamism of life. Its working mechanism and precision are responsible for our performance in life.

CO5.The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy.

S.Y.B.Sc. COURSE OUTCOMES (CO) (Sem. I and II): ANIMAL DIVERSITY III & IV

CO1. The students will be able to understand, classify and identify the diversity of higher vertebrates.

CO2. The students will able to understand the complexity of higher vertebrates

CO3. The students will be able to understand different life functions of higher vertebrates.

CO4. The students will be able to understand the linkage among different groups of higher vertebrates.

Radlay

CO5. The student will become aware regarding his role and responsibility towards nature as a protector, to understand his role as a trustee and conservator of life which he has achieved by learning, observing and understanding life.

APPLIED ZOOLOGY I AND II

CO1. To understand the basic life cycle of the honeybees, beekeeping tools and equipments.

CO 2. To learnfor managing beehives for honey production and pollination.

CO 3. To understand the basic information about fishery, cultural and harvesting methods of fishes.

CO 4. To understand fish preservation techniques.

CO 5. To understand the biology, varieties of silkworms and the basic techniques of silk production and harvesting of cocoons.

CO 6. To learn the different silkworm species and their host plants.

CO 7. To study types of agricultural pests and Major insect pests of agricultural importance.

CO 8. To study Pest control practices.

CO 9. The learner understands the basics about beekeeping tools, equipment, and managing beehives.

CO10. The learner understands the basic information about fishery, cultural and harvesting methods of fishes and fish preservation techniques.

CO11. The learner understands the biology, varieties of silkworms and the basic techniques of silk production.

CO12. The learner understands the types of agricultural pests, Major insect pests of agricultural importance and Pest control practices.

DEPARTMENT OF MATHEMATICS

PROGRAMME OUTCOMES (PO)

PO1. Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerous power of mathematical ideas and tools and know how to use them by modeling ,solving and interpreting.

PO2. Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science and technology.

PO3. Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills , creative talent and power of communication necessary for various kinds of employment .

PO4. Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

PROGRAMME SPECIFICOUTCOMES (PSO)

Radlay Principal

PSO1. A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays, state important facts resulting from their studies.

PSO2. A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.

PSO3. A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.

PSO4. A student be able to apply their skills and knowledge ,that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

PSO5. A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

FACULTY OF ARTS

PROGRAMME OUTCOMES (PO)

: The programmes under Arts faculty are broadly categorized into Languages and Social Sciences.

PO:1- Specific, measurable statements of what graduating / existing students should know, be able to do , believe or value after completing the program.

PO:2- Depends on the program mission statements.

PO:3- Students summarize Language acquisition theory and research.

PO:4- Students evaluate pedagogical materials.

PO:5- Students build the multidimensional personality and able to correlate Languages with social sciences.

PO:6- Demonstrate proficiency in a range of techniques and media.

PO:7- Communication: Demonstrate familiarity with and ability to analyze both verbally and in writing issues and forms of contemporary art with a clear understanding of historical precedents.

PO:8- Critical Thinking: Demonstrate the ability to articulate an insightful response and analysis of a work of art in order to participate in discussions and studio critiques.

DEPARTMENT OF MARATHI

F.Y.B.A. COURSE OUTCOMES Course – Course

मराठीसाहित्यकथाएकांकिकाआणिभाषिककौशल्यविकास

Objectives

१) मराठीभाषा, मराठीसाहित्यआणिमराठीसंस्कृतीयांचेअध्ययनकरणे.

(२) साहित्यआस्वादआणिमूल्यमापनक्षमताविकसित

विकसितकरणे.

मराठीभाषेचीउपयोजनाकोविकसितकरणे

Outcomes

१) मराठीभाषा, मराठीसाहित्यअभ्यासक्रमा

विद्यार्थ्यांनीअध्ययनकेले.

२साहित्यविषयककथाएकांकिका) आकलनआस्वादआणिमूल्यमापनमा

३) कथाआणिकवितायासाहित्यजीवविकसितकेली

४) मराठीभाषेचीउपयोजनात्मककौशल्येउदावाचनलेखनमद

-लेखन, कल्पनाविस्तार.

F.Y. B.COM. COURSE OUTCOMES

Course भाषा, साहित्याआणिकौशल्यविकास

Objectives

१) विविधक्षेत्रातीलभाषाव्यवहाराचेस्वरूपवगरजसमजावूनदेणे,

२) क्षेत्रातीच्याभाषेचेस्थानस्पष्टकरणेतीलमराठीयाप्रत्यक्ष

वापरावाअभ्यासकरणे,

(३) विविधलेखनप्रकाराचाअभ्यासलेखनाचीकौशल्यवापरण्याससक्षमकरणे,

४) विविधक्षेत्रातीलव्यक्तच्याकार्याचीओळखकरूनदे

५) विद्यार्थ्यामध्येनैतिकव्यवसायीकववैचारिकमुल्यांचीजोपासनाकरणे

Outcomes

१) विद्यार्थ्यांनीक्षेत्रातीलभाषाव्यस्वरूपसमजावूनघेतली.

करूनघेतली.

३) विविधलेखनप्रकाराचा (चरित्र, आत्मचरित्रवैचारिक) अभ्यासवलेखनकौशल्य

विद्यार्थ्यांनीकेले

विविधक्षेत्रातीलव्यक्तीच्याकामांची

विचाराचीओळखकरूनघेतलीआहे.

५) व्यावसायीकववैचारिकमुल्यांचीजोपासनासमजावूनघेतली

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S.Y.B.A. COURSE OUTCOMES

course (CG-2) आधुनिकमराठीसाहित्यआणिउपयोजितमराठी

Objectives

१) शुद्धाचीओळखदेणे.

२) पारिभाषिकशब्दाचीओळखकरूनदेणे.

३) चारयासाहित्यप्रकारांच्यातात्विकपटकदेणे

४) आधुनिकमराठीसाहित्यातीलनिवडकचरित्रआत्मचरित्मकयाचेआकलन

आस्वादआणिमूल्यमापनपरवांचीक्षमताविद्यार्थीमध्येनिर्माणंकरणे.

Outcomes

1) पारिभाषिकशब्दांचीओळखकरूनघेतली.

2) चरित्रवआत्मचरित्रयासाहित्यप्रकाराच्यातात्विकघटकांचेज्ञानविद्यारून

घेतले

3) वमाझीजडणघडण (आत्मचलेखनयाविषयीचेआकलन

आस्वादमूल्यमापनकरण्याचीक्षमताविकसितझाली.

[23 Course [31] मराठीसाहित्यातीलविविधसाहित्यप्रकार

Objectives

(१) मराठीसाहित्यप्रकाराच्याघटकाचेज्ञानदेणे.

२) अभिसाहित्यसंस्कारपवि

3) साहित्यकृतीचेआकलनआस्वादवमूल्यमापनकरण्याचीदृष्टीनिर्माण

४) साहित्याचीक्षमताविकसितकरणे.

Outcomes

- १) प्रकारांचेज्ञानघेतले
- २) अभिजातसाहित्यकृतींचासंस्कार
- ३) फकिरा' (टमाटक) यासाहित्यकृतीचेआकलनआद

मूल्यमापनकेलेगेले.

४) साहित्याचासूक्ष्मपातळीवरअभ्यासकरण्याचीक्षमताविद्यार्थ्यांकसितझाली.

3) Course (9-2) चीमराठीवाड:मयाचाइतिहास (इ.स.१८१८ते१९६०)

Objectives

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१) मराठीसाहित्याच्याऐतिहासिकपरंपरेचेस्थानदेणे

२) विशिष्टकालखंडाच्यापार्श्वभूमीवरसाहित्यामागीलप्रेरणाप्रवृतीचेज्ञानकरूनदेणे

३) साहित्यविकसनशीलपरंपरेचेस्थूलदे

४) अभ्यासकरण्याचीपूर्वतयारीकरणे.

Outcomes

१) मराठीसाहित्याच्याऐतिहासिकपरंपरेचेज्ञानविद्यार्थ्यांनीकरूनघेतले

२) विशिष्टकालखंडाच्यापार्श्वभूमीवरमाहियामागीलप्रेरणाप्रवृतीचेज्ञानविद्यार्थ्यांनी

झाले.

३) साहित्यप्रकाशाच्याविकसनशीलपरपरेचेस्थूलज्ञानविद्यार्थ्यांनाझाले

४) पदनुसारअभ्यासकरण्याचीपूर्वतयारीविद्यार्थ्यांनीकेली

T.Y.B.A COURSE OUTCOMES:

Course (G-3)

आधुनिकमराठीसाहित्यआणिव्यावसायीकवउपयोजितमराठीवआस्वादघेण्याचीक्षमताअभिवनीलविविधसाहित्यांचापरिचयवत्याचेआक लन

२) नेमलेल्याकलाकृतीचासंदर्भसाहित्यपरंपरास्थूलपरिचयकरूनदेणे.

3) भाषेचेयोचितआकलनकरण्याचीवापरकरण्याचीक्षमता.

४) प्रावर्णनयासाहित्यप्रकारांचेतात्विकविवेचनकरणे.

५) विद्यार्थ्याचालेखनक्षमताविकसितकरूनत्यांनापरीक्षणाचीआवड

निर्माणव्हावीयासाठीप्रवृत्तकर

Outcomes

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१) आधुनिकातीलविविधसाहित्यांचाविद्यार्थ्यांनीपरिचयकरूनघेऊनत्याचेआकलनवस्वाक्षरीसाठीअध्ययनकेल

२) साहित्यपरंपरेतपरिचितआकलनवापरकरण्याचीक्षमताविकसितकेलीगेली

3) निबंधयासाहित्यप्रकाराचेविवेचनकरण्याचीक्षमताविकसित केलीगेली.

५) वाचनलेखनवपरीक्षणयाविषयीआनिर्माणहोण्याचीक्षमता विकसितकेलीगेली

T.Y.B.A. COURSE OUTCOMES

Course (5-3) साहित्यविचार

Objectives

- १) साहित्याचेस्वरूपसमजावूनघेणे
- २) साहित्यप्रयोजावूनघेणे.
- 3) त्यासमजावून
- ४) साहित्याचीभाषासमजावूनघेणे
- ५) साहित्याचीआस्वादप्रक्रियासमजावूनघेणे
- ६) साहित्यिकअभिरुचीसमजावूनघेणे
- ७) वाङ्मयीनमूल्यसमजावूनघेणे
- ८) साहित्यातीलपेणे

Outcomes

- (१) विद्यार्थ्यांनीसाहित्याचेस्वरूपसमजावूनघेतले.
- (३) साहित्यनिर्मितीप्रक्रियासमजावूनघेतली
- ४) साहित्यभाषासमजावूनघेतली,
- ५) साहित्याचीआस्वादप्रक्रियासमजावूनघेतली.
- ६) साहित्यिकसमजावूनघेतली
- (७) वाडमयीनमूल्यसमजावूनघेतली.

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८) साहित्यआणिसमाजातीलपरस्परसंबंधसमजावूनघेत

Course (S4) भाषाविज्ञान: वर्णनात्मकवऐतिहासिक

Objectives

१) भाषेचेस्वरूपकामहत्वआणिभाषेचीप्रमुखअंगजागूनपे

२)वरूपमहत्वजाणूनघेणे

३) यारचनावकार्यआणिस्वनिर्मितीचीप्रक्रियासम

४) ऐतिहासिकभाषापद्धतीचेस्वरूपमहत्वलक्षातघेणे.

(५) मराठीभाषेचाउत्पतीकाळमराठीभाषेचीऐतिहासिकवाटाआणूनघेणे.

Outcomes

१) भाषेचेस्वरूपकामहत्वआणिभाषेचीप्रमुखजाणून

2)भाषापद्धतीचेस्वरूपमहत्वजाणूनघेतले.

3)नवर्यआणिस्वनिर्मितीप्रक्रियासमजावूनघेतली

४)पद्धतीचेस्वरूपमहत्वलक्षा

(५) मराठीभाषेचाउत्पतीकाळमराठीभाषेचीऐतिहासिक पेतली

एफ. वाय. बी. ए. तथाबी. कॉम. (वैकल्पिकहिन्दी)

- १. छात्रोकोहिन्दीसाहित्यसेपरिचितकिया।
- २. हिन्दीकहानीसाहित्यसेअवगतकिया।
- ३. हिन्दीभाषाद्वारासंवादकौशलविकसितकिया।

४. मौलिकलेखनकीओररुझानबढ़ादिया।

५. विज्ञापनलेखनकौशलविकसितकिया।

६. अनुवादसंबंधीजानकारीदी।

७हिन्दीकम्प्यूटिंगकापरिचयदिया।

८. हिन्दीकाव्यसाहित्यकापरिचयदिया।

९. विज्ञापनलेखनकौशलविकसितकिया।

एस. वाय. बी. ए.

पेपरG2

Sod (a)

- 1. छात्रोकोप्रतिनिधीकहानीकारोतथाकविओकापरिचयकाराया।
- २. छात्रोकोकहानीतथाकविताकीविशेषताओंसेपरिचयकाराया।
- ३. छात्रोंकोव्यावहारिकतथाकार्यालयपत्रलेखनसेअवगतकराया।
- ४. छात्रोकोव्यावहारिकक्षेत्रसेपरिचितकाराया।
- ५. छात्रोकोशब्दयुग्मज्ञानकाकाराया

पेपरS1

- १. छात्रोकोभाषाकीपरिभाषा, विशेषताएतथाभाषाकेविविधरूपोकीजानकारीदी।
- २. छात्रोकोबोलीयोंतथाभाषाविकासकेप्रमुखवादसेपरिचितकिया।
- ३. छात्रोमेंभाषाकेवैज्ञानिकअध्ययनकीदृष्टीविकसितकिया।
- ४. भाषाविज्ञानकेअंगोतथाभाषाविज्ञानकेशाखाओंकापरिचयकाराया।
- ५. भाषाविज्ञानअन्यविज्ञानसेपरिचयकाराया।

पेपरS1

- १. छात्रोंमेंनाटकऔरउपन्याससमीक्षाकीक्षमताविकसितकी।
- २. छात्रोंमेंनाटकऔरउपन्यासआस्वादनकीक्षमताविकसितकी।
- ३. मध्ययुगीनकाव्यसेपरिचितकिया।
- ४. साहित्यकेशिल्पएवंसौदर्यसेपरिचितकिया।
- ५. मध्ययुगीनकवियोंकेयोगदानसेपरिचितकिया
- टी. वाय. बी. ए.

पेपरG3

९. छात्रोंकोआत्मकथाविधातथाकाव्यनाटककेस्वरूपकापरिचयदिया।छात्रोको

पारिभाषिकशब्दतथासंक्षिप्तयोकेमाध्यमसे

- २. सरकारीकार्यालयोंमेंप्रयुक्तकीजानेवालीकार्यालयीनहिन्दीकापरिचयदिया।
- ३. छात्रोकोसरकारीपत्रलेखनसेअवगतकराया।
- ४. छात्रोंकोपत्रकारिताकेविभिन्नपाहलूओंसेपरिचितकाराया।
- ५. छात्रोमेंअंग्रेजीसेहिन्दीमेंअनुवादकीकलाकोविकसितकिया।

पेपरS3 (हिन्दीसाहित्यकाइतिहास)

- 1.हिन्दीसाहित्यकेइतिहासकीलेखनपरंपरासेअवगतकिया.
- .पारिभाषिकशब्दतथासंक्षिप्तयोकेमाध्यमसेपरिचयदिया।

Principal

2.छात्रोंको।सरकारीकार्यालयोमेंप्रयुक्तकीजानेवालीकार्यालयीनहिन्दीकापरिचयदिया

३. छात्रोकोसरकारीपत्रलेखनसेअवगतकराया।

४. छात्रोकोपत्रकारिताकेविभिन्नपाहलूओंसेपरिचितकाराया।

५. छात्रोंमेंअंग्रेजीसेहिन्दीमेंअनुवादकीकलाकोविकसितकिया।

पेपरS3 (हिन्दीसाहित्यकाइतिहास)

१.. हिन्दीसाहित्यकेइतिहासकीलेखनपरंपरासेअवगतकिया.

2 हिन्दीसाहित्यकेइतिहासकालखंडीकापरिचयदिया।

३. हिन्दीसाहित्यकीप्रतिनिधीराचनाओतथारचनाकारोकापरिचय

दिया।

४. हिन्दीसाहित्यकेविकसक्रमतथासाहित्यपरिवर्तनोंकापरिचयदिया।

५. हिन्दीसाहित्यकेइतिहासकेमाध्यमसेसाहित्यऔरयुगजीवनका

संबंधअवगतकराया।

पेपरS4 (काव्यशास्त्र)

१. छात्रोंकोकाव्यसाहित्यकीपरिभाषा, स्वरूप, काव्यप्रयोजन, काव्यहेतूओंसे

परिचितकिया।

- २. छात्रोकोकाव्यकेतत्व, भेदतथाशब्दशक्तिकाज्ञानकाराया
- ३. छात्रोंकोछंदऔरअलंकारोंकापरिचयदिया।
- ४. छात्रोंकोनाटकतथाअन्यगद्यभेदोकापरिचयदिया।
- ५. छात्रोकोरसकेविभिन्नअंगोकापरिचयदिया।

DEPARTMENT OF ENGLISH

PROGRAMME SPECIFIC OUTCOMES (PSO):

PSO:1- Use correct English in oral as well as written form.

PSO:2- Inculcate the human values for one's transformation of behavior.

PSO:3- Interpret the literary works by critical analysis.

Sadlay

PSO:4- Compare literary works of the great writers and philosophers by using their logic and literary competency Nurture themselves in soft skills and develop research aptitude.

PSO:5- Find jobs for their livelihood Be motivated for their further education

F. Y. B.A. COURSE OUTCOMES (CO) (SEM.I and II) F.Y.B.A. :

COMPULSORY ENGLISH- I AND II

CO1. To expose students to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English

CO2. To instill human values and develop the character of students as responsible citizens of the world

CO3.To develop the ability to appreciate ideas and think critically

CO4.To enhance employability of the students by developing their linguistic competence and communicative skills CO5.To revise and reinforce structures already learnt in the previous stages of learning.

F. Y. B. A- OPTIONAL ENGLISH (GENERAL PAPER-1)

CO1.To expose students to the basics of literature and language and develop an integrated view about language and literature in them

CO2. To acquaint them with minor forms of literature in English and help them to appreciate the creative use of language in literature

CO3. To introduce them to the basics of phonology of English so that they can pronounce better and speak English correctly.

CO4.To prepare students to go for detailed study and understanding of literature and language

CO5. To enhance the job potential of students by improving their language skills

S. Y. B. A. COMPULSORY ENGLISH

CO1. To develop competence among the students for self-learning

CO2. To familiarize students with excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English

CO3.To develop students' interest in reading literary pieces

CO4. To expose them to native cultural experiences and situations in order to develop humane values and social awareness

CO5. To develop overall linguistic competence and communicative skills of the students

S. Y. B. A. GENERAL ENGLISH (G-2)

. Title of the Paper: Study of English Language and Literature

CO1. To expose students to the basics of short story, one of the literary forms.

Principal

CO2. To familiarize them with different types of short stories in English.

CO3. To make them understand the literary merit, beauty and creative use of language

CO4.To introduce some advanced units of language so that they become aware of the technical aspects and their practical usage.

CO5. To prepare students to go for detailed study and understanding of literature and language

CO6. To develop integrated view about language and literature in them.

S. Y. B. A. SPECIAL PAPER-I (S-1)

Title of the Paper: Appreciating Drama

CO1.To acquaint and familiarize the students with the terminology in Drama Criticism (i.e. the terms used in Critical Analysis and Appreciation of Drama)

CO2. To encourage students to make a detailed study of a few sample masterpieces of nglish Drama from different parts of the world

CO4.To develop interest among the students to appreciate and analyze drama independently

CO5.To enhance students awareness in the aesthetics of Drama and to empower them to evaluate drama independeNtly

S. Y. B. A SPECIAL PAPER-II (S-2)

Title of the Paper: Appreciating Poetry

CO1.To acquaint and familiarize the students with the terminology in poetry criticism (i.e. the terms used in critical analysis and appreciation of poems)

CO2. To encourage students to make a detailed study of a few sample masterpieces of English poetry

CO3. To enhance students awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate the poetry independently.

T. Y. B. A. COMPULSORY ENGLISH

CO1. To introduce students to the best uses of language in literature.

CO2. To familiarize students with the communicative power of English

CO3. To enable students to become competent users of English in real life situations

CO4. To expose students to varied cultural experiences through literature

CO5. To contribute to their overall personality development by improving their communicative and soft skills.

T. Y. B. A. GENERAL ENGLISH

Principal

(G-3) Title of the Paper: Advanced Study of English Language and Literature

CO1. To expose students to some of the best samples of Indian English Poetry

CO2. To make the students see how Indian English poetry expresses the ethos and culture of India

CO3. To make them understand creative uses of language in Indian English Poetry

CO4.To introduce students to some advanced areas of language study

CO5. To prepare students to go for detailed study and understanding of literature and language

CO6. To develop integrated view about language and literature among the students.

T.Y.B.A. SPECIAL PAPER III (S-3)

Title of the Paper: Appreciating Novel

CO1. To introduce students to the basics of novel as a literary form

CO2. To expose students to the historical development and nature of novel

CO3. To make students aware of different types and aspects of novel

CO4. To develop literary sensibility and sense of cultural diversity in students

CO5. To expose students to some of the best examples of novel.

T.Y.B.A. SPECIAL PAPER IV(S-4)

Title of the Paper: Introduction to Literary Criticism

CO1. To introduce students to the basics of literary criticism

CO2. To make them aware of the nature and historical development of criticism

CO3. To make them familiar with the significant critical approaches and terms

CO4. To encourage students to interpret literary works in the light of the critical approaches

CO5. To develop aptitude for critical analysis.

Department of Economics

Programme Outcomes

After successfully completion of three year degree program in Economics student should be able to;

- PO-1. Present economic theory and applications in written and oral form
- . PO-2. Demonstrate an understanding of microeconomic and macroeconomic theory
- PO-3. Apply economic theory to issues in fields of economics

Rad (any)

PO-4.

carry out economic and policy analyses that draw on microeconomic theory, apply economic analysis to everyday problems in real world situations, to understand current events and evaluate specific policy proposals.

PO-5. Explain the function of market and prices as allocative mechanisms.

PO-6. Apply the concept of equilibrium to both microeconomics and macroeconomics.

PO-7. Identify key macroeconomic indicators and measures of economics change, growth, and development.

PO-8. Identify and discuss the key concepts underlying comparative advantage

PO-9. Identify and explain major types of market failures.

Programme Specific Outcomes

PSO-1.To able to understand basic concepts of economics.

PSO-2.To able to analyse economic behaviour in practice.

PSO-3. Understand the economic way of thinking.

PSO-4.The ability to analyse historical and current events from an economic perspective.

PSO-5. The ability to write clearly expressing an economic point of view.

PSO-6. Be exposed to alternative approaches to economic problems through exposure to coursework in allied fields.

PSO-7.To create students' ability to suggest of the various economic problems.

Course outcomes of Economics

F.Y.B.A Economics (Indian Economic Environment)

Choice Based Credit System (CBCS) Objectives of the paper (Course Outcome)

1. To familiarize the students with the recent developments in the Indian Economy

2. To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment.

3. To help the students to prepare for varied competitive examinations

4. To enable students to understand and comprehend the current business scenario, agricultural scenario and other sectorial growth in the Indian context.

5. To make the student aware of the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO, etc.

Programme Outcome:-

Nutan Art's College, Rajapur Tal. Sangamner, Dist. Ahmednagar

1. Ability to develop an understanding of the economic environment and the factors affecting economic environment.

2. Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc.

3. Ability to compare and contrast Indian Economy with other world economies.

4. At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.

S.Y.B.A Choice Based Credit System (CBCS)

G -2. Financial System Objectives (Course Outcomes) of the Paper:

1. To understand fundamentals of modern financial system.

2. To understand the recent trends and developments in banking system.

3. To understand the role of the Reserve Bank of India in Indian financial system.

4. To provide the knowledge of various financial and non-financial institutions.

5. To provide the students the intricacies of Indian financial system for better financial decision making.

S.Y.B.A. Economics (Revised Syllabus) S -1. Micro Economics Objectives (Course Outcomes) of the Paper:

1. To develop an understanding about subject matter of Economics.

2. To impart knowledge of microeconomics.

3. To clarify micro economic concepts

• To analyse and interpret charts, graphs and figures.

4. To develop an understanding of basic theories of micro economics and their application.

5. To demonstrate that the theories discussed in class will usually be applied to real-life situations.

6. To help the students to prepare for varied competitive examinations Method of Teaching: Classroom lectures, Use of ICT, YouTube lectures,

S.Y.B.A. Economics (Revised Syllabus) S -2. Macro Economics Preamble – Objectives (Course Outcomes) of the Paper:

1. To introduce students to the historical background of the emergence of macroeconomics.

2. To familiarize students with the differences between microeconomics and macroeconomics.

3. To familiarize students with various concepts of national income.

4. To familiarize students with Keynesian macroeconomic theoretical framework of consumption and investment functions.

Zadlau

5. To introduce students to the role of money in an economy.

6. To introduce students to the conceptual and theoretical frameworks of inflation, deflation and stagflation, Business Cycle.

T.Y.B.A Economics spl 3 International Economics

1 Sem- V

1. To relate and recall the concept of International Economics and International Trade

2. To describe and apply the theories of international trade

3. To explain and comprehend the issues relating to terms of trade and Balance of PaymentInternational Economics

Sem VI

1. Ability to relate and explain the concept of exchange Rate and foreign exchange Markets.

2. Ability to describe the trends in growth, composition and Direction of India foreign Trade.

3. Ability to comprehend the issue relating to foreign capital and Reginal and international co-operative. Skill Enhancement Course Business Management 1.Management of Business.

2. Business planning and decision making Leadership skills – Ability to work in teams at the same time, ability to show leadership quality.

T.Y.B.A Economics SPL VI Public Finance

1. To explain and assess the components and instruments of Fiscal Policy.

- 2. To related to the concepts of budget and its components
- 3. To describe and analyze the concept of deficit financing and its effect.
- 4. To describe and explain the centre and state financial Relationship.
- 1. To related and recognize the nature and scope of public finance.
- 2. To describe and analyze the concept of Public Revenue and its components.
- 3. To explain types of public expenditure and reasons for rising public expenditure.
- 4. To explain the types of Public Debt and its effect.

T.Y.B.A Economics General Paper 3 Indian economic Development Sem-V

- 1- To relate and recognize the concept will have ability
- 2- To describe and analyze the concept and indicators of Human Development.
- 3- To explain the characteristics of Development and Developed countries

4- To describe the constraints to the process of economic Development.

Indian economic Development Sem-VI

1. To describe and explain the process of Economic Planning.

2. To describe and examine the changing structure of planning process in India.

To describe and explain the relation between Economic Development and Environment.

T.Y.B.COM Course code 353 Indian & Global Economic Development

1- Students will be able to understand present Economic Scenario of Indian Economy as well as World Economy

2. Students will be able to understand the various aspects of development in Agricultural, Industrial and service sector in India.

3. Students will be able to critically evaluate the role of India in international economy. Students will be able to evaluate the working of international financial organization and institutions.

DEPARTMENT OF POLITICAL SCIENCE

PROGRAMME SPECIFIC OUTCOMES (PSO)

PSO1. To foster curiosity in the students for Political Science.

PSO2.To creates awareness amongst students for the basic of Political Science.

PSO3.To orients students about the importance of Indian Constitution.

PSO4.To provides an insight to the aspects of Political Theory.

PSO5. To understand the Local Self Government of Maharashtra.

F.Y.B.A. COURSE OUTCOMES (CO) (Sem. I and II):

COURSE TITLE: INTRODUCTION TO INDIAN CONSTITUTION

CO1. To acquaint students with the important features of the Constitution of India and with The basic framework of Indian government.

CO 2. To familiarize students with the working of the Constitution of India.

S.Y.B.A. COURSE OUTCOMES (CO)

Principal

COURSE TITLE:- POLITICAL THEORY& CONCEPTS

CO1.This is an introductory paper to the concepts, ideas and theories in political theory. It seeks to explain the evolution and usage of these concepts, ideas and theories with reference to individual thinkers both historically and analytically. CO2.The different ideological standpoints with regard to various concepts and theories are to be critically explained with the purpose of highlighting the differences in their perspectives and in order to understand their continuity and change. CO3.Furthermore there is a need to emphasize the continuing relevance of these concepts today and explain how an idea and theory of yesteryears gains prominence in contemporary political theory.

COURSE TITLE:- WESTERN POLITICAL THOUGHT

CO1. This paper studies the classical tradition in political theory from Plato to Marx with the view to understand how the great Masters explained and analyzed political events and problems of their time and prescribed solutions.

CO2. The texts are to be interpreted both in the historical and philosophical perspectives to understand the universality of the enterprise of political theorizing. The limitations of the classical tradition, namely its neglect of women's concerns and issues and the non-European world are critically examined.

CO3. The legacy of the thinkers is explained with the view to establish the continuity and Change within the Western political tradition.

COURSE TITLE:- POLITICAL SOCIOLOGY

CO1.To introduces students to the basic social processes of society, social institutions and patterns of social behaviour. CO2. To train students to understand and to interpret objectively the role of social processes, social institutions and social interactions in their lives. •

T.Y.B.A. COURSE OUTCOMES (CO)

COURSE TITLE:-LOICAL SELF GOVERNMENT IN MAHARASHTRA

CO1. To introduce the students to the structure of Local Self Government of Maharashtra.

CO2. To make students aware of the various Local Self Institutions, their functions, Compositions and importance. CO3. To identity the role of Local Government and Local Leadership in development.

DEPARTMENT OF GEOGRAPHY

PO.1. Ability of Problem Analysis: Student will be able to analyses the problems of physical as well as cultural environments of both rural and urban areas. Moreover, they will try to find out the possible measures to solve those problems.

PO.2.Conduct Social Survey Project: They will be eligible for conducting social survey project, which is needed for measuring the status of development of a particular group or section of the society

Principal

PO.3. Individual and teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO.4. Application of modern instruments: Students will be able to learn the application of various modern instruments and by these; they will be able to collect primary data.

PO.5. Application of GIS and modern Geographical Map Making Techniques: They will learn how to prepare map based on GIS by using the modern geographical map-making techniques.

PO.6. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions from different perspectives.

PO.7. Development of Observation Power: As a student of Geography Course, they will be capable to develop their observation power through field experience and in future, they will be able to identify the socio-environmental problems of a locality.

PO.8. Development of Communication Skill and Interaction Power: After the completion of the course, they will be efficient in their communication skill as well as power of social interaction. Some of the students are being able to understand and write effective reports and design credentials, make effective demonstrations, and give and receive clear instructions.

PO.9. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO.10. Enhancement of the ability of Management: Demonstrate knowledge and understanding of the management principles and apply these to their own work, as a member and leader in a team, to manage projects. They will perform effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO.11. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO.12. Understand Environmental Ethics and Sustainability: Understand the impact of the acquired knowledge in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

PO.13. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context social, environmental and technological changes.

PROGRAMME SPECIFIC OUTCOMS GEOGRAPHY (PSO)

PSO1.Acquireing Knowledge of Physical Geography: Student will gain the knowledge of physical geography. Student will have a general understanding about the geomorphological and geotechnical process and formation. They will be able to correlate the knowledge of physical geography with the human geography.

PSO2.Acquireing Knowledge of Human Geography: They will be able to acquire the knowledge of Human Geography and will correlate it with their practical life.

Principal

PSO3. Ability of Problem Analysis: Student will be able to analyse the problems of physical as well as cultural environments of both rural and urban areas. Moreover they will try to find out the possible measures to solve those problems.

PSO4.Conduct Social Survey Project: They will be eligible for conducting social survey project which is needed for measuring the status of development of a particular group or section of the society.

PSO5. Application of modern instruments: Students will be able to learn the application of various modern instruments and by these they will be able to collect primary data.

PSO6. Application of GIS and modern Geographical Map Making Techniques: They will learn how to prepare map based on GIS by using the modern geographical map making techniques.

PSO7. Development of Observation Power: As a student of Geography Course they will be capable to develop their observation power through field experience and in future they will be able to identify the socioenvironmental problems of a locality

PSO8. Development of Communication Skill and Interaction Power: After the completion of the project they will be efficient in their communication skill as well as power of social interaction. Some of the students are being able to understand and write effective reports and design credentials, make effective demonstrations, and give and receive clear instructions.

PSO9.Enhancement of the ability of Management: Demonstrate knowledge and understanding of the management principles and apply these to their own work, as a member and leader in a team, to manage projects. They will perform effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PSO10. Understand Environmental Ethics and Sustainability: Understand the impact of the acquired knowledge in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

PSO11.Life-long learning: Identify the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of societal and environmental change

COURSE OUTCOMES (CO) GEOGRAPHY (UG) GEOMORPHOLOGY (GEO- SEM-I)

CO1. Develop an idea about geomorphology and different types of fundamental concepts.

CO2. Explain different types of geomorphic processes like weathering and mass wasting and cycle of erosion.

CO3. Understand the processes of erosion, deposition and resulting landforms.

CO4. Acquire knowledge about slope forms and processes.

PRACTICALS (GEO- SEM-I)

CO1. Gain knowledge about topographical maps and apply this knowledge in ground surface.

CO2. Identification of different types of rock and minerals

HUMAN GEOGRAPHY (GEO- SEM-II)

CO1. Gain knowledge about major themes of human geography.

CO2. Develop an idea about space and society.

CO3. Build an idea about population growth and distribution of population.

CO4. . Know about population -resource relationship.

PRACTICALS (GEO-, SEM-II)

CO1. Know about diagrammatic data presentation like line, bar and circle.

CO2. Develop an idea about different types of thematic mapping techniques

SETTLEMENT GEOGRAPHY (GEO-, SEM-II)

CO1. Build an idea about urban and rural settlements, and its relationship with environment and also different theories related to settlement geography.

CO2. Know about classification and morphology of settlements.

CO3. Understand the trends and patterns of world urbanization.

CO4. Know about different theories of urban growth.

PRACTICALS (GEO- SEM-II)

CO1. Brings direct interaction of different types of surveying instruments like Dumpy level and Theodolite with environment.

CO2. Develop an idea about different types of thematic mapping technique

PHYSICAL GEOGRAPHY- PART I

CO1. Understand different theories of the earth.

CO2. Develop history of geomorphic ideas of different schools.

CO3. Gain knowledge about earth's interior.

CO4. Develop an idea about concept of earth's movements and related topography

CO5. Acquire knowledge about different process of denudation.

PHYSICAL GEOGRAPHY - PART II

- CO1. Understand the processes of erosion, deposition and resulting landforms.
- CO2. Explain the development of drainage system in uniclinal and folded structure.
- CO3. Understand concept of normal cycle of erosion and its interruption.

Principal

CO4. Develop an idea about types of coastal landforms.

CO5. Acquire knowledge about hydrology.

Department of Hindi

Program Outcome of Bachelor of Arts (B.A.)

Students seeking admission for B.A. programme are expected to imbue with following quality which help them in their future life to achieve the expected goals.

PO-1: Realization of human values.

PO-2: Sense of social service.

PO-3: Responsible and dutiful citizen.

PO-4: Critical temper.

PO-5: Creative ability.Programmes Specific Outcomes B.A. (Hindi)

PSO-1: Creating an interest in literature.

PSO-2: Availing the job opportunities in transformation and media.

PSO-3: Developing language. PSO-4: Increasing the critical attitude about literary studies.

PSO-5: Imbuing the literary research attitude.

Course Outcomes F.Y.B.A. SEM-I (Hindi)

CO-1.Understanding the interrelation between literature and society.

CO-2.Explaining the nature of Language and Literature.

CO-3.Obtaining the skills of literary criticism.

CO-4.Imbuing the essay writing skills.

CO-5.Illustrating the nature of literary forms like one-act-play, travelogue and short-story.

B.A. SEM-II (Hindi)

CO-1.Introduction of medieval Hindi language and literature.

CO-2.Introduction of the contemporary literary works.

CO-3. Acquiring the skill of translation.

CO-4. Explanation of the need and significance of editing.

S.Y.B.A.(G2) SEM-III (Hindi) Poetry

CO-1.Acquaintance with oriental poetry.

CO-2.Understanding the nature and features of poetry.

Principal

CO-3. Creating the skills of critical appreciation of poems.

CO-4. Developing the poetic devices and their uses.

SEM-III (S1) Linguistics:

CO-1.Getting acquainted with modern linguistics.

CO-2.Understanding origin, nature and function of language.

CO-3. Getting information about phonetics.

CO-4.Enhancing the interest in Hindi Language.

SEM-III (S2) Medieval Hindi Literature:

CO-1.Introduction of the historical survey of medieval Hindi literature.

CO-2.Introduction of the literary forms in medieval literature.

CO-3.Explanation of the trends and structure of medieval Hindi Literature.

III Utility and Creativity of Hindi Language:

CO-1.Understanding the formal and informal language.

CO-2. Developing various language skills.

CO-3.Getting motivation for creative writing.

CO-4. Understanding the technique of mass communication

TYBA HINDI (G3) KathherGadyaSahityaSem-V

1. To make students aware of memoir literature.

- 2. To make students aware of Resvachitra literature.
- 3. To develop students from the point of view of evaluation.
- 4. To develop the development of meeting chronicle writing skills.
- 5. Build dialogue-writing skills. Sem-VI Ghazal literature
- 1. To make students aware of Ghazal literature.
- 2. To make the students aware of the personality of the Ghazalkar.
- 3. To develop the attitude of assessment to the students.
- To make students aware of government letter writing.

S4 Sem-V BhashaVighyan

- 1. Introducing the nature of linguistics.
- 2. To explain the scope of Linguistics to the students.

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- 3. Introducing the directions of linguistics.
- 4. To explain the application aspect of linguistics.
- 5. To explain the utility of linguistics in the study of literature.

Sem-VI Hindi Bhasha our Vikas

1. Introducing the nature of linguistics.

2. To explain the scope of Linguistics to the students.

- 3. Introducing the directions of study of linguistics.
- 4. Explaining the Application aspect of Linguistics.
- 5. To explain the utility of linguistics in the study of literature.

S3 Sem-V History of Hindi Literature

1. To acquaint the students with the background of modern times.

- 2. To make students aware of the poetry of Bharattendu era.
- 3. To get acquainted with the creators of the modern period.
- 4. To sensitize the students about the origin and development of Hindi poetry.

Sem-VI History of Hindi Literature

1. Introduction to Hindi Literature Writing.

2. To introduce the period division and nomenclature of Hindi literature.

3. To get acquainted with the compositions of the ancient, devotional, ritual, creators

MA-I Hindi Sem-I/Sem-II Course out comes

1. To give information about the poetic lines of the carpet and the devotional period under Hindi literature.

2. To give information about the poetic lines of Bhakti period.

3. To develop critical vision in students through the study of ancient and medieval poetry

4. Introducing the elemental form of the main genres of mattresses, increasing the ability to understand and evaluate the importance of a particular composition in the context of the elemental nature of the genre and historical development.

5. To give information about the development sequence of major prose genres.

6. Importance of literary review to students introducing

7. Introducing the Indian literature to students

Principal

8. Introducing the poetic power and limitations of Kabir to students

9. Introducing the personality and work of Kabir to the students in the context of the then circumstances, giving information about his delivery to Hindi

MA-II Hindi SahithyaSem-III/IV Course out comes

1 To make students aware of modern poetry

2 Develop poetic radiance vision 3 Introduce the nature of linguistics

4 Introduce communication media and communication concepts

5 Develop communication skills.

6 Introducing the major literary trends of the ancient devotional rituals, creators and compositions.

7 Introducing the multifaceted role of the media .

8 Explaining the scope of linguistics to the students.

Department of Commerce.

Programme outcomes: After successful completion of threeyear degree programme in commerce student should be able to...

1. The powers conferred by the RBI and its guidelines are the parameter is made known to the students. 2. An Understanding solved and recognised practical. The students are well acquainted with the development in the industries.

3. The new trends in banking sector is made loan to the students with the help of Banking Regulation Act, 1949

4. Use of modern technology such as Tally ERP -9.00 and GST

5. The Role of GST in the economic prosperity and its practical Application is familiar to the students.

6. SEBI guideline and its impact on stock exchange is been an important contribution to the society is imparted to the students.

7. Awareness of income tax and structure is made familiar to the students.

8. Corporate social Responsibility of the company and its implementation according to the companies Act 2013 has to be practice are mandatory

Programme specific outcomes:

PSO-1 To know the marketing Mix concepts

PSO-2.Gain the knowledge of banking through theory and practical

PSO-3.Importance of soft skill is well-known to the students.

PSO-4. The theories of Maslow, McGregor, Henry Fayola, ,F.W. Taylor, Ouchi, has practical relevance.

PSO-5. Accounting standards and its various concept has been made known to the students

PSO-6 Employee provident funds and Bonus Act usefulness is being made known to the students

PSO-7 Understand the GST & Income tax concept up-to-date.

PSO-8 Gain the knowledge of ascertainment of cost through theory and practical.

F.Y.B.Com (Credit pattern 2019) Sem I

Course outcomes:

After completion of this courses student should be able to......

112 FinancialAccounting:

1. To impart the knowledge of various accounting concepts

2. To instill the knowledge about accounting procedures, methods and techniques.

3. To acquaint them with practical approach to accounts writing by using software package.

113 Business Economics (Micro)

1. To expose Students of Commerce to basic micro economic concepts and inculcate an analytical Approach to the subject matter.

2. To stimulate the student interest by showing the relevance and use of various economic theories.

3. To apply economic reasoning to problems of business.

115 – b. Banking and Finance [Fundamentals of Banking]

1. To acquaint the students with the fundamentals of banking.

2. To develop the capability of students for knowing banking concepts and Operations.

3. To make the students aware of banking business and practices.

4. To give thorough knowledge of banking operations.

5. To enlighten the students regarding the new concepts introduced in the banking system

116 - c. Marketing and Salesmanship [Fundamentals of Marketing]

- a) To understand the basic concept of marketing.
- b) To understand marketing philosophy and generating ideas for marketing research.

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- c) To know the relevance of marketing in modern competitive world.
- d) To develop an analytical ability to plan for various marketing strategy.

Sem II 122 FinancialAccounting:

- 1. To impart knowledge of various software used in accounting
- 2. To impart knowledge about final accounts of charitable trusts
- 3. To impart knowledge about valuation of intangible assets
- 4. To impart knowledge about accounting for leases.

123 Business Economics (Micro)

1. To understand the basic concepts of micro economics.

2. To understand the tools and theories of economics for solving the problem of decision making by consumers and producers.

3. To understand the problem of scarcity and choices.

125 - b. Banking and Finance [Fundamentals of Banking]

- 1. To develop the working capability of students in banking sector
- 2. To Make the Students aware of Banking Business and practices.
- 3. To enlighten the students regarding the new concepts introduced in the banking system

126 - c. Marketing and Salesmanship [Fundamentals of Marketing]

- 1. To introduce the concept of Salesmanship.
- 2. To give insight about various techniques required for the salesman.
- 3. To inculcate the importance of Rural Marketing.

4. To acquaint the students with recent trends in marketing and social media marketing

S.Y. B.Com. (Credit pattern 2019) Sem III

231. Business Communication.

1. To understand the concept, process and importance of communication.

2. To develop awareness regarding new trends in business communication.

3. To provide knowledge of various media of communication.

4. To develop business communication skills through the application and exercises.

232. Corporate Accounting

1. To make aware the students about the conceptual aspect of corporate accounting

Principal

2. To enable the students to develop skills for Computerized Accounting

3. To enable the students to develop skills about accounting standards

233. Business Economics (Macro)

1. The objective of the course is to familiarize the students the basic concept of Macro Economics and Application.

- 2. To Study the behaviour of the economy as a whole.
- 3. To Study the relationship among broad aggregates.
- 4. To apply economic reasoning to problems of the economy.

234. Business Management

1. To provide basic knowledge & understanding about business management concept.

To provide an understanding about various functions of management.

235. Elements of Company Law.

1) To impart students with the knowledge of fundamentals of Company Law.

2) To update the knowledge of provisions of the Companies Act of 2013.

3) To apprise the students of new concepts involving in company law regime.

4) To acquaint the students with the duties and responsibilities of Key Managerial Personnel.

5) To impart students the provisions and procedures under company law.

b. Banking & Finance I

1) To evaluate the student and knowledge impart of the banking sector

2) To know the importance of RBI and it guidelines

3) To seek opportunities in the banking sector e.

Sem IV

241. Business Communication.

- 1. To understand the concept, process and importance of communication.
- 2. To acquire and develop good communication skills requisite for business correspondence.
- 3. To develop awareness regarding new trends in business communication.
- 4. To provide knowledge of various media of communication.
- 5. To develop business communication skills through the application and exercises.
- 242. Corporate Accounting

1. To acquaint the student with knowledge of corporate policies of investment for expansion and growth through purchase of stake in or absorption of smaller units.

2. To develop the knowledge among the student about consolidation of financial statement with the process of holding.

3. To update the students with knowledge of the process of liquidation of a company

4. To introduce the students with the recent trends in the field of accountancy

243. Business Economics (Macro)

1. To familiarize the students to the basic theories and concepts of Macro Economics and their application.

2. To understand the theories of money.

3. To understand the phases of trade cycle and policy measures to elongate the trade cycle.

4. To understand various concepts related to public finance.

5. To understand credit creation of banks and money measures of RBI.

244. Business Management

1. To provide basic knowledge & understanding about business management concept.

2. To provide an understanding about various functions of management.

245. Elements of Company Law.

1. To develop general awareness among the students about management of company

2. To have a comprehensive understanding about Key managerial Personnel of company and their role in Company administration.

3. To acquaint the students about E Governance and E Filling under the Companies Act, 2013.

4. To equip the students about the various meetings of Companies and their importance.

5. To make students capable of becoming good human resource of the corporate sector

b. Banking & Finance I

1. To provide the knowledge of Cooperative Banking in India

2. To analyze the functioning of Development Banking

3. To create the awareness about Banking Sector Reforms

4. To understand the role of various committees on Banking Sector Reforms e.

T.Y.B.Com (2019 pattern)

Sem V

Principal Nutan Art's College, Rajapur Tal. Sangamner, Dist. Ahmednagar

351 - Business Regulatory Framework

a. To provide conceptual knowledge about the framework of business Law in India.

b. To orient the students about the legal aspect of business.

c. To create awareness among the students about legal environment relating to the Contract Law, Partnership Act, Sale of Goods Act in India.

d. To understand the emerging issues relating to e-commerce, e-transaction issues and E Contracts

352- ADVANCED ACCOUNTING

a. To acquaint the student with knowledge about various concepts, objectives, and applicability of some important accounting standards.

b. To develop the knowledge among the students about reorganization of business regarding restructuring the capital.

c. To update the students with knowledge for preparation of final accounts of a Banking Companies with the provisions of Banking Regulation Act 1949.

d. To empower to students with skills to prepare the investment account in simple and summarized manner.

353- Indian & Global Economic Development

a. Students will be able to understand present Economic Scenario of Indian Economy as well as World Economy.

b. Students will be able to understand the various aspects of development in Agricultural, Industrial and service sector in India.

c. Student will be able to critically evaluate the role of India in international economy.

d. Students will be able to evaluate the working of international financial organization and institutions.

354- Auditing& Taxation

a. To acquaint themselves about the Definition, Nature, Objectives and Advantages of Auditing, Types of Audit, Errors and Fraud, Audit Program, Notebook, Working Paper, Internal Control, Check.

b. To get knowledge about concept of Checking, Vouching, Verification and Valuation, Types of Audit Report and Auditing Assurance Standard.

c. To understand the provision related Qualification, Disqualification, Appointment, Removal, Rights ,Duties and Liability of Company Auditor and Provisions regarding Tax Audit as per Income Tax Act 1961 (Section 44 AA to 44AE).

d. To know the various new concepts in computerized system and Forensic Audit.

355- Special Paper II b. Banking and Finance-Special Paper II

a. To acquaint the students with Indian Financial System and its various segments.

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b. To make the students aware about Indian Money Market.

c. To analyse and understand the functions of Indian Capital Market. d. To enable the students the functioning of Foreign Exchange Market.

Banking and Finance-Special Paper III

a. To familiarize the Banking Laws and Practice in correlation to the Banking System in India.

b. To understand the legal aspects of Banking transactions and its implication as a Banker and as a customer.

c. To familiarize the students with the Banking Laws and Practices in India.

d. To make students capable of understanding and applying the legal and practical aspects of banking to help them technically sound in banking parlance.

SEM VI

361 - Business Regulatory Framework

1. To develop general awareness of Business Law among the students.

2. To understand the various statutes containing regulatory mechanism of business and its relevant provisions including different types of partnerships.

3. To have a understanding about the landmark cases/decisions having impact on business laws

362- Advanced Accounting

1. To instill the knowledge about accounting procedures, methods and techniques.

2. To impart students' knowledge of various Advanced Accounting Concepts.

363- Indian & Global Economic Development

1. To develop ability of students to analyze economic development process of India.

2. To acquaint the students with the knowledge of recent trends in Human Development Index.

3. To acquaint students with the emerging issues in policies of India's foreign trade.

4. To update the students about International institutions and organizations.

364- Auditing& Taxation

1. To understand the basic concepts of Income Tax Act, 1961 and create awareness of direct taxation among the students.

2. To understand the income tax rules and regulations and its provisions.

3. To have a comprehensive knowledge of calculation various types of income.

4. To know the recent changes made by the finance bill (Act) every year and its impact on taxation of person.

5. To acquaint the students on Income tax department portal (ITD), e-filing and e-services mechanism relating to Assesses.

365- Special Paper II b. Banking and Finance-Special Paper II

1 .To familiarize students about various basic concepts of stock market.

2 . Toanalyse the types and process of stock trading.

3 .To enable the students to understand the functions and working of Non -Banking Financial Institutions in India .

366- Special Paper III b.Banking and Finance-Special Paper III

1. To familiarize students about concept and types cybercrimes in banking.

2. To understand the aspects of paying and collecting banker.

3. To analyse the banker and customers relationship.

4. To enable the students to apply the legal and practical aspects of bank advances.

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