Outcomes
Faculty of Arts
Department of Marathi
Program Outcomes B. A.

1. The students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough.
2. The B.A. graduates will be acquainted with the social, economic, historical, geographical, political, ideological and philosophical tradition and thinking.
3. The program also empowers the graduates to appear for various competitive examinations or choose the post graduate program of their choice.
4. The B. A. program enables the students to acquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity.
5. The students will be ignited enough to think and act over for the solution of various issues prevailed in the human life to make this world better than ever.
6. Program provides the base to be the responsible citizen.
7. A graduate student in arts/social sciences/humanities shall be confident to speak, write, read, listen and understand the English language and one or more Indian languages.
8. Program Develops clear, rational and progressive thinking. Participating in decision-making concerning the society and upholding national development, integrity, unity and fraternity.

B.A. in Marathi

Program Specific Outcomes (PSO's)

- Creating an interest in literature.
- Availing the job opportunities in translation, transformation and Media. Developing language.
- Increasing the critical attitude about literary studies.
- Imbuing the literary research attitude.

Course Outcomes (CO's)

B.AI **(Marathi Compulsory)**

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

B.A I Paper I **(Marathi Optional)**

Introduction of the medieval Marathi language and literature.
2. Introduction of the contemporary literary works.
3. Acquiring the skill of translation.
4. Explanation of the need and significance of editing.

B.A II Paper II

1. Acquaintance with oriental poetry.
2. Understanding the nature and features of poetry.
3. Creating the skill of critical appreciation of a poem.
4. Developing the poetic devices and their usages.

B.A II Paper III Linguistics:

1. Getting acquainted with modern linguistics.
2. Understanding origin, nature and function of language.
3. Getting information about phonetics.
4. Enhancing the interest in Marathi language.

B.A III Paper IV Medieval Marathi Literature:

1. Introduction of the historical survey of medieval Marathi literature.
2. Introduction of the literary forms in medieval literature.
3. Explanation of the trends and structure of medieval Marathi literature.

B.A III Paper V Utility and Creativity of Marathi Language:

1. Understanding the formal and informal language.
2. Developing various language skills.
3. Getting motivation for creative writing.
4. Understanding the technique of mass communication.

B.A III Paper VI Literary Criticism:

1. Introduction to various trends in literary criticism.
2. Understanding various trends in rural literature.
3. Understanding various trends in Dalit Literature.

B.A III Paper VII literature and society

1. Demonstrate the critical theories and their knowledge
2. Apply Marathi literature knowledge in Marathi

B.A III Paper VIII modern Marathi literature

1. Show the research attitude and abilities.
2. Analyze structure of language at different levels (phonological, Morphological and syntactic)

B.A III Paper IX occupational Marathi

1. Display the skills and abilities for media and publication Marathi

After completion of program students will able to.

2. Apply occupational knowledge in Marathi.

Department of Economics

Program Outcomes

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

Student seeking admission for B.A. programme is expected to imbue with following quality which helps them in their future life to achieve the expected Goals.

a. Realization of human values.
b. Sense of social service.
c. Responsible and dutiful citizen.
d. Critical temper
e. Creative ability.

Program Specific Outcomes B.A.(Economics)

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

1. To able to understand basic concepts of economics.
2. To able to analyse economic behaviour in practice.
3. Understand the economic way of thinking.
4. The ability to analyse historical and current events from an economic perspective.
5. The ability to write clearly expressing an economic point of view.
6. Be exposed to alternative approaches to economic problems through exposure to coursework in
allied fields.
7. To create students ability to suggest of the various economic problems.

Course outcomes

Class: - S.Y.B.A.(Sem. III)

Paper Name:-Indian Economy: Contemporary Concerns

On completion of the course, students are able to

1. To able to understand concept of demonetization
2. To able to understand fiscal framework of India
3. To able to understand concept of Universal Basic Income
4. To able to understand income and consumption divergence within India

Class: - S.Y.B.A.(Sem. IV)

Paper Name:-Development Issues of Maharashtra's Economy

On completion of the course, students are able to

1. To able to understand key features of Maharashtra's economy
2. To able to understand different challenges before Maharashtra's economy
3. To able to understand different policies of Maharashtra Govt.
4. To able to understand infrastructure availability and health status of Maharashtra.

Class: - T.Y.B.A.(Sem. V)

Paper Name: - ECONOMICS OF DEVELOPMENT: PAPER VIII

On completion of the course, students are able to

1. To able to understand concepts of growth and development
2. To able to understand theories of economic development
3. To able to understand concept of poverty & inequality
4. To able to understand role of technology in development

Class: - T.Y.B.A.(Sem. V)
Paper Name: - ECONOMICS OF AGRICULTURE AND COOPERATION: PAPER IX
On completion of the course, students are able to
1. To able to understand economics of agriculture
2. To able to understand Indian agriculture sector
3. To able to understand agricultural prices, marketing & subsidies in India
4. To able to understand agriculture finance, insurance& capital formation

Class: - T.Y.B.A.(Sem. V)
Paper Name: - ENVIRONMENTAL ECONOMICS: PAPER XI
On completion of the course, students are able to
1. To able to understand economics of environment
2. To able to understand various environmental problems
3. To able to understand various environmental policies in India
4. To able to understand concept of sustainable development

Class: - T.Y.B.A.(Sem. VI)
Paper Name: - INTERNATIONAL ECONOMICS: PAPER XIV
On completion of the course, students are able to
1.To able to understand concepts of domestic & international Trade
2. To able to understand theories international trade.
3. To able to understand concepts of FDI and Business Process Outsourcing.
4. To able to understand trade policies of international trade associations and organisations.

Class: - T.Y.B.A. (Sem. VI)
Paper Name: - ECONOMICS OF AGRICULTURE AND COOPERATION: PAPER XV
On completion of the course, students are able to
1. To able to understand Meaning and features of Co-operation
2. To able to understand Co-Operative Finance in India.
3. To able to understand role and types of Agro-Industries in India
4. To able to understand importance of co-operative Organizations in India

Class: - T.Y.B.A. (Sem. VI)
Paper Name: - DEVELOPMENT THEORY AND EXPERIENCE: PAPER XVII
On completion of the course, students are able to
1. To able to understand demographic concepts like birth rate, death rates.
2. To able to understand different models of structural transformation.
3. To able to understand role of Agriculture in Economic Development
4. To able to understand economic models of environmental issues.

Class: - S.Y.B.Com (Sem. III)
Paper Name: - Business Economics III
On completion of the course, students are able to
1. To able to understand basic concepts of macroeconomics
2. To able to understand different concepts of Keynesian economics.
3. To able to understand concept of IS-LM model and Phillips curve.
4. To able to understand meaning and types of inflation.

Class: - S.Y.B.Com (Sem. IV)
Paper Name: - Business Economics IV Foundation of Public Finance
On completion of the course, students are able to

1. To able to understand Meaning and Scope of Public finance
2. To able to understand different Sources of Public Revenue.
3. To able to understand concept of Public Expenditure And Public Debt.
4. To able to understand importance of Fiscal Management and Financial Administration

Class: - T.Y.B.Com (Sem. V)

Paper Name: - Business Economics - V Macro Economic Aspects of India

On completion of the course, students are able to

1. To able to understand Overview of New Economic Policy-1991
2. To able to understand Agricultural pricing and agricultural finance
3. To able to understand The Industry And Service Sector During Post Reform Period
4. To able to understand Money Market and Capital market.

Class: - T.Y.B.Com (Sem. VI)

Paper Name: - Business Economics-VI International Economics

On completion of the course, students are able to

1. To able to understand different Theories of International Trade
2. To able to understand Tariff And Non Tariff Barriers
3. To able to understand concepts of Balance of payments and International Economic Organization
4. To able to understand Foreign Exchange market

Department of History

Program Specific Outcome

1. The Arts Graduate can peruse further studies in M.A. in History, B. Ed, Archeology, Musiology,
Epigraphy, MBA in Heritage

2. The Student can acquire the skill in answering and qualifying the competitive exam and the other necessary examination.

3. They can take up job as Assistant Professor at Colleges, Higher Secondary's and Schools.

4. Students can pursue M. Phil and PhD in Applied areas.

Course Outcome - F.Y.B.A. (History)

Semester – I

History of Modern India (1857-1947)

Semester –II

History of Modern India: Society and Economy.

1. Create aware about the making of modern India and the struggle for independence.

Course Outcome - S.Y.B.A. (History) SEMESTER–III SEMESTER-IV

Paper-II

Landmarks in World History, 1300 A.D.-1945 A.D.

1. Students enable to comprehend the transition of Europe from medieval to modern times and its
impact on the world.
2. To provide accurate knowledge of the most significant events and personalities of the period
under study and encourage understanding of the making of the modern world

Paper- III

Ancient India from Earliest Times to 1000 A.D.

1. To acquaint the students with different sources of Ancient Indian History.
2. Students enable to understand the political, socio-economic and cultural developments in the
period under study and appreciate the rich cultural heritage in India

Course Outcome - T.Y.B.A. (History) SEMESTER–V SEMESTER-VI

SEMESTER –V

Core Course IV- History of Medieval India (1000 CE-1526CE)

1. Focusing on the history of early Medieval India that laid the foundation of the Sultanate in India.
2. Study the contribution of Vijayanagar and Bahamani kingdoms to Medieval Indian History.
3. Examining the administrative, socio-economic and cultural aspects of Medieval India.

Core Course V- History of Modern Maharashtra (1818 CE-1960 CE)

1. Acquainting students with regional history.
2. Create understanding about political and socio-economic developments during the 19th and 20th centuries.
3. create understanding of the movement that led to the formation of
Maharashtra.

Core Course VI A – Introduction to Archaeology

1. Create understand the basic facets of Archaeology.

2. Evaluating the importance of Epigraphy.
3. study the importance of Numismatics as an important source of history.

SEMESTER –VI

Core Course: **IV- History of Medieval India (1526 CE-1707CE)**

1. Acquainting the students with the history of India since the emergence of the Mughal rule.
2. Create understanding administration of the Mughal Empire.
3. Study the rise of the Maratha Power.

Core Course V – History of Contemporary India (1947 CE- 2000 CE)

1. Create understanding about the process of making the Constitution and the Integration and Reorganization
of Indian States.
2. Acquainting the students with the political developments in India after Independence.
3. Comprehending the socio-economic changes and progress in science and technology in India.

Elective Course VI A - Introduction to Museology and Archival Science

1. Learning about the role of Museums in the preservation of Heritage.
2. Understanding about the importance of Archival Science in the study of History.
3. Encouraging to students for pursues careers in various Museums and Archives in India and abroad.

Faculty of Commerce
Department of Commerce
Program Outcome

Students who have taken admission to this program of B.Com are expected to concentrate upon the following outcomes.

1. Commercial sense.
2. Budgeting policy.
3. Entrepreneurial skill.
4. Develop managerial skills.
5. Human Resources Management.
6. Develop Numerical ability.
7. To inculcate knowledge of accountancy.
8. Well versed with business regulatory framework.

Program Specific Outcomes
ACCOUNTANCY

1. Understanding basic concepts of accountancy, principles of accountancy and accounting standards to maintain accounts of trading & non-trading organizations.
2. Getting acquainted with the procedure of preparation of income statements, retained earnings, balance sheet and statement of working capital which are required for external users and more useful to managers for managerial decision making.
3. Inculcating different skills for analysis and interpretation of financial data to understand financial health of an organization and ensure that resources are being used to achieve the organizations objectives.
4. Developing knowledge about cost ascertainment and fixation of selling price and cost control.
5. Getting working knowledge of generally accepted auditing procedure, techniques and skills. **Course Outcomes**

F Y.B.Com.
Accountancy and Financial Management P. I & II

1. Understanding the concepts of financial Accounting.
2. Exposure to nature and advantages of Accounting, Accounting concepts and conventions, Accounting Standards.
3. Preparation of Final Accounts of Manufacturing concern and departments.
4. Accounting for hire purchase.
5. Getting knowledge about accounting procedure of single entry system, branch accounts and consignment accounts.
6. Accounting for fire insurance claim.

Business Development P.I & II

1. Getting knowledge of business & objectives of business.
2. Creating knowledge about business environment.
3. Getting knowledge of project planning.
4. Getting acquitted with entrepreneurship.
5. Developing knowledge about concept of services.
6. Developing knowledge about retailing.
7. Getting knowledge of recent trends in service sector.
8. Creating knowledge about E-Commerce.

S. Y.B.Com.

Accountancy and Financial Management P. III & IV

1.Understanding basic concepts of partnership final accounts based on adjustment of admission or retirement /death of partner.

2. Getting acquainted with the procedure of piecemeal distribution of cash on liquidation of partnership firm.

3. Understanding the accounting procedure of amalgamation.

4. Getting acquainted with company accounts.

5. Developing knowledge about redemption of preference share.

6. Developing knowledge about redemption of debentures.

7. Obtaining the knowledge of various provisions about profit prior to incorporation.

Financial Accounting and Auditing P. V & VI

Management Accounting

1. Creating knowledge about vertical arrangement of income statement and balance sheet.

2. Developing knowledge about preparation of common size statement, comparative statement and trend analysis.

3. Developing knowledge about computing ratios.

4. Developing knowledge about estimation of working capital requirement.

5. Developing knowledge about project evaluation techiques.

Auditing

1. Knowledge about auditing principles and techniques of auditing.

2. Getting knowledge of vouching of cash and credit transactions.

3. Knowing the appointment procedure of auditor.

4. Getting knowledge of verification of cash and credit transactions.

5. Knowledge about writing of audit reports.

Principles of Management and Finance P.III & IV

1. Getting acquitted with management, evolution of management thoughts and modern management approach.

2. Getting knowledge of planning & decision making.

3. Creating knowledge about organising.

4. Developing knowledge about directing and controlling.

5. Developing knowledge about production & inventory management.

6. Getting knowledge of quality management.

7. Creating knowledge about Indian financial system.

8. Creating knowledge about recent trends in finance.

Business Law P.I & II

1. Introduction to business law as well as other laws.

2. Achieving the knowledge of Indian contract.

3. Knowing the information the sale of good act, 1932.

4. Awareness of legal liability of the negotiable instrument.

5. Developing the knowledge about company act.

6. Creating legal awareness among the students about partnership act.

7. Acquainting with the Consumer Protection act and competition act.

8. Understanding the intellectual property right.

T. Y.B.Com.

Financial Accounting and Auditing P. VII & IX

Financial Accounting

1. Creating knowledge about the issue of shares and debentures of the company.
2. Attainment of knowledge about accounting procedure of company final account.
3. Understanding the accounting procedure for amalgamation and absorption of company
4. Ability to get the knowledge about valuation of shares.
5. Understanding the accounting procedure of liquidation of Ltd. company.
6. Understanding the transactions of foreign currency.

Financial Accounting and Auditing P. VIII & X

Cost Accounting

1. Creating knowledge about accounting for material, labour and overheads.
2. Developing knowledge about preparation of cost sheets, tenders, quotations, etc. and reconciliation of cost accounts with financial accounts.
3. Developing knowledge about preparation of cost control accounts.
4. Developing knowledge about procedure for accounting for contract accounts and process accounts.
5. Developing knowledge about accounting for marginal and standard costing.

Marketing & Human Resource Management P.V & VI

1. Developing knowledge about marketing and marketing research
2. Getting knowledge of marketing mix
3. Creating knowledge about marketing ethics
4. Getting acquitted with key marketing dimension
5. Creating knowledge about introduction to human resource management
6. Developing knowledge about human recourse development
7. Getting acquitted with human relations
8. Developing knowledge about current issue in human resource management

Export Marketing P.I & II

1. Enhancing the skill of export marketing among students.
2. Providing different techniques of export marketing for increase of sales.
3. Creating the sense how to behave in the market while buying or selling of product.
4. Understanding how to undertake crucial task such as competition analysis, production etc.
5. Providing information about buying pattern and different attitudes of consumers.

Labour Welfare & Practice P.I & II

1. Understanding constitutional provisions regarding labour.
2. Awareness of labour legislations pertaining to Industrial Relations.
3. Providing information about traditional concept of labour welfare in the industry
4. Understand the labour policy aspects in the country
5. Understand the conditions of labour and their welfare and social security needs in the country.
6. Developing the knowledge about labour markets and its characteristics.
7. Achieving legal provisions regarding regional Industrial Relations.
8. To study legal provisions of working conditions and social security.
9. Conversant with the legal aspects of how to deal with social security measures as well as working conditions of factories.

Faculty of Science

Programmer outcomes of B.Sc.

Acquired knowledge with facts and figures related to various subjects in basic sciences such as Physics, Chemistry, Biology, Mathematics, etc.

Understood the basic concepts, fundamental principles, and scientific theories related to various scientific phenomena and their relevance in day-to-day life.Acquired skills in handling scientific instruments, planning and performing laboratory experiments nothing down the observations and drawing logical inferences from them.

Analyzed the given scientific data critically and systematically and drawing objective conclusions.

Been able to think creatively (divergently and convergent) to propose novel ideas in explaining facts and figures or providing new solution to the problems.

Realized how developments in any one-science subject help in the development in other science subjects and vice-versa and how interdisciplinary approach helps in providing better solutions and new ideas for sustainable developments.

Developed scientific outlook not only with respect to science subjects but also in all aspects related to life.

Realized that knowledge of subjects in other faculties such as humanities, performing arts, social sciences etc can greatly and effectively influence & inspire in evolving new scientific theories and inventions.

Imbibed ethical, moral and social values in personal and social life leading to highly cultured
and civilized personality.

Developed various communication skills such as reading, listing, speaking, etc., which we will help in expressing ideas and views clearly and effectively.

Realized that pursuit of knowledge is a lifelong activity and in combination with untiring efforts and positive attitude all necessary qualities for leading a successful life.

Developed a flair for participating in various social and cultural activities voluntarily, in order to spread knowledge, creating awareness about the social evils, blind faith, etc.

Department of Mathematics
Learning Outcomes for Calculus I (Math 1910)

Upon completion of the course, the student will be able to:

1. interpret a function from an algebraic, numerical, graphical and verbal perspective and extract information relevant to the phenomenon modeled by the function.
2. verify the value of the limit of a function at a point using the definition of the limit
3. calculate the limit of a function at a point numerically and algebraically using appropriate techniques including l'Hospital's rule.
4. find points of discontinuity for functions and classify them.
5. understand the consequences of the intermediate value theorem for continuous functions
6. interpret the derivative of a function at a point the as the instantaneous rate of change in the quantity modeled and state its units.
7. interpret the derivative of a function at a point as the slope of the tangent line and estimate its value from the graph of a function
8. sketch the graph of the derivative from the given graph of a function.
9. given a table of function values, approximate the value of the derivative at a point using the forward difference quotient and the centered difference quotient
10. compute the value of the derivative at a point algebraically using the (limit) definition
11. derive the expression for the derivative of elementary functions from the (limit) definition
12. be able to show whether a function is differentiable at a point.
13. compute the expression for the line tangent to a function at a point
14. interpret the tangent line geometrically as the local linearization of a function
15. compute the expression for the derivative of a function using the rules of differentiation Including the power rule, product rule, and quotient rule and chain rule.
16. compute the expression for the derivative of a composite function using the chain rule of differentiation.
17. differentiate a relation implicitly and compute the line tangent to its graph at a point
18. differentiate exponential, logarithmic, and trigonometric and inverse trigonometric functions.
19. obtain expressions for higher order derivatives of a function using the rules of differentiation
20. interpret the value of the first and second derivative as measures of increase and concavity of a functions.
21. compute the critical points of a function on an interval.
22. identify the extrema of a function on an interval and classify them as minima , maxima or saddles using the first derivative test.
23. use the differential to determine the error of approximations.
24. understand the consequences of Rolle's theorem and the Mean Value theorem for differentiable functions
25. find the anti-derivative of elementary polynomials, exponential, logarithmic and trigonometric functions.
26. interpret the definite integral geometrically as the area under a curve
27. construct a definite integral as the limit of a Riemann sum

28. approximate a definite integral using left sum, right sum, midpoint and trapezoidal rules
29. interpret the indefinite integral as a definite integral with variable limit(s).
30. interpret differentiation and anti-differentiation as inverse operations (Fundamental Theorem of Calculus, part 1)
31. interpret the anti-derivative as a definite integral with variable limit and implement this
expression on graphing platforms
32. evaluate a definite integral using an anti-derivative (Fundamental Theorem of Calculus, part 2)
33. use substitution to find the anti-derivative of a composite function.
34. apply basic optimization techniques to selected problems arising in various fields such as physical modeling , economics and population dynamics.

Department of Physics

Programmer Specific Outcomes

Demonstrate a rigorous understanding of the core theories & principles of physics, which include mechanics, electromagnetism, thermodynamics, & quantum mechanics.

 Learn the Concept of Quantum Mechanics, Relativity, introduced at degree level in order to understand nature at atomic levels.

 Provide knowledge about material properties and its application for developing technology to ease the problems related to society.

 Understand the set of physical laws, describing the motion of bodies, under influence of system of forces.

 Understand the relationship between particles & atom, as well as their creation & decay.

 Learn the structure of solid materials & their different physical properties along with metallurgy, electronics, & material science.

 Understand fundamental theory of nature at small scale & energy levels of atom & batomic particles.

USPH301

Course Outcome :

PHYSICS-Paper-I Mechanics and thermodynamics

On successful completion of this course, students will be able to :

i) Understand the concepts of mechanics & properties of matter & to apply them to problems.

ii) Comprehend the basic concepts of thermodynamics & its applications in physical situation.

iii) Learn about situations in low temperature.

iv) Demonstrate tentative problem solving skills in all above areas.

USPH302 PHYSICS-Paper-II Vector calculus, Analog Electronics

1) Understand the basic concepts of mathematical physics and their applications in physical situations.

2) Understand the basic laws of electrodynamics and be able to perform calculations using them.

3) Understand the basics of transistor biasing, operational amplifiers, their applications

4) Understand the basic concepts of oscillators and be able to perform calculations using them.

5) Demonstrate quantitative problem solving skill in all the topics covered

USPH303 PHYSICS-Paper-II Applied Physics –I

i) Students will be exposed to contextual real life situations.

ii) Students will appreciate the role of Physics in 'interdisciplinary areas related to materials, Bio Physics, Acoustics etc.

iii) The learner will understand the scope of the subject in Industry & Research.

iv) Experimental learning opportunities will faster creative thinking & a spirit of inquiry.

USPHP3 PHYSICS Practical course -3 (Group A,B,C and Skill)
(Based on USPH301, USPH302 & USPH303)

i) Understand &practice the skills while performing experiments.
ii) Understand the use of apparatus and their use without fear & hesitation.
iii) Correlate the physics theory concepts to practical application.
iv) Understand the concept of errors and their estimation.

USPH401 PHYSICS-Paper-I Optics and Digital Electronics

1) Understand the diffraction and polarization processes and applications of them in physical situations.
2) Understand the applications of interference in design and working of interferometers.
3) Understand the resolving power of different optical instruments.\
4) Understand the working of digital circuits
5) Use IC 555 time for various timing applications.
6) Demonstrate quantitative problem solving skills in all the topics covered.

USPH402 PHYSICS-Paper-II Quantum Mechanics

1) Understand the postulates of quantum mechanics and to understand its importance in explaining significant phenomena in Physics.
2) Demonstrate quantitative problem solving skills in all the topics covered.

USPH403 PHYSICS-Paper-III Applied Physics –II

i) Understand the concepts of Geology & Geophysics & to apply them to problems.
ii) Comprehend the basics of Microprocessor & Basic Assembaly Language Programming
iii) Learn about situations in low temperature.
iv) Understand the concepts of Radio Communication.
iv) Demonstrate tentative problem solving skills in all above areas.

USPHP4 PHYSICS Practical course -4 (Group A,B,C and Demo) (Based on USPH401, USPH402 & USPH403)

i) Understand & practice the skills while performing experiments.
ii) Understand the use of apparatus and their use without fear & hesitation.
iii) Correlate their physics theory concepts to practical application.
iv) Understand the concept of errors and their estimation.

Department of Chemistry

Program Specific Outcomes

1) Improve the knowledge of students in chemical sciences.
2) Create awareness of the students in environmental problems.
3) Understanding the need of modern tools in chemical sciences.
4) Awareness of the knowledge of instruments to students.
5) Information regarding the market for chemical industry.
6) Developing the practical skill of the students.
7) Understanding the basic information of drugs and dyes.
8) General introduction to Dyestuff Chemistry.
9) Safety in laboratory.
10) Introduction to quality concepts such as quality control, quality assurance and sampling

Course Outcomes

F. Y. B. Sc. General Chemistry (Sem-I) Chemistry P-I

Physical Chemistry:

Knowledge about chemical thermodynamics, First law of thermodynamics, thermodynamic terms and chemical calculations based on expressing concentration of solutions.

Inorganic Chemistry:

Can understand the atomic structure, Rutherford atomic model, Bohr's theory, concept of principles of quantum mechanics, Periodical table and periodicity.

Organic Chemistry:

Can write the IUPAC names of any organic compounds from their structure and draw its structure from its IUPAC name. Bonding and structure of organic compounds, fundamentals of organic reaction mechanisms.

Chemistry P-II

Physical Chemistry:

Gain the knowledge of chemical kinetics, order and molecularity of reaction, Integrated rate equation of first and second order reaction, Liquid state such as surface tension, viscosity, refractive index and liquid crystals.

Inorganic Chemistry:

Student comparatively studies the properties of main group elements such as electro negativity, oxidation state, diagonal relationship, allotropy, catenation property.

Organic Chemistry:

Can draw the Fischer, Newman, Sawhorse projection formulae, Cis-Trans, Syn-Anti, E/Z nomenclature. Introduction of optical isomerism and conformation analysis of alkanes.

Practical's **Paper-I:**

1. They can determine the rate constant for the saponification reaction between ethyl acetate and NaOH. Determine the pH values of Buffer solutions. Plotting the calibration curve of $KMnO_4$ by colorimeter. Can write the Material Data Safety Sheet (MSDS)

2. Semi micro qualitative analysis of simple two acidic radicals and two basic radicals from mixture.

Paper-II:

1. They can find out percentage of Cu(II) in sample by iodimetry.
2. They can characterize the organic compound containing C, H, O, N, S and halogens elements.

S. Y. B. Sc. (Sem-III) General Chemistry-I

Physical Chemistry:

1. They can know the concept of chemical thermodynamics, Partial Molal Properties, Chemical Potential and its variation with Pressure and Temperature.
2. Can know the concept of electrochemistry, Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes.
3. Can determine the transference number and its experimental determination using Moving boundary method.

Inorganic Chemistry:

1. Student can understand the chemical bonding, Non- Directional and directional Bonding.
2. Can understand the role of Hybridization and types of hybrid orbitals-sp, sp_2, sp_3, sp_3d, $sp_2d_2$and sp_2d sp_3d_2. Molecular Orbital Theory: Linear combination of atomic orbital's (LCAOs) to give molecular orbitals. 3. They can able to draw the Molecular orbital diagram of O_2,O_2 + O_2
-,O_2 2- etc.

Organic Chemistry:

1. Can study the reactions and reactivity of halogenated hydrocarbons such as Alkyl halides, Aryl halides: Reactivity of aryl halides towards nucleophilic substitution reactions.
2. They can be familiar with the concept of organomagnesium and organo-lithium compounds and reactivity of carbon-metal bond.
3. Student can know the methods of preparation and reactions of alcohols, phenols and epoxides.

General Chemistry P-II

Physical Chemistry:

1. Student learned the basic concepts of Chemical Kinetics: Reversible or opposing, consecutive and parallel reactions.
2. They can study the effect of temperature on the rate of reaction, Arrhenius equation, Concept of energy of activation.
3. Students can familiarize with the theories of reaction rates i. e. collision theory and activated complex theory of bimolecular reactions.
4. Know the concept of Solutions: Ideal solutions and Raoult's law, deviations from Raoult's law-non-ideal solutions. Vapour pressure-composition and temperature - composition curves of ideal and non-ideal solutions. Distillation of solutions.
5. Student can study the partial miscibility of liquids: Critical solution temperature; effect of impurity on partial miscibility of liquids with respect to Phenol-Water , Triethanolamine-Water and Nicotine-Water systems

Inorganic Chemistry:

1. Students aware about the selected topics on p block elements i. e, Boron, Silicon, Germanium, Nitrogen family.

Organic Chemistry:

1. Student can study the chemistry of carbonyl compounds.
2. They can draw mechanism of Benzoin condensation, Knoevenagel condensation, Claisen-Schmidt and Cannizzaro reaction

Basics of Analytical Chemistry P-III

1. Learners should be able to decide how to identify a sample and prepare it for analysis
2. Can select a proper procedure for analysis and identify sources of possible errors in the results obtained.
3. Student can able to select proper titrimetric method identify a suitable gravimetric method.
4. Learners can perform the required calculations involved in the analysis by titrimetry as well as gravimetry.

Practical's

1. Students can able to handle the analytical instruments such as conductometer, Potentiometer, Colorimeter, pH meter etc.
2. Can determine the energy of activation of acid catalyzed hydrolysis of methyl acetate.
3. Can investigate the reaction between $K_2S_2O_8$ and KI with equal initial concentrations of the reactants
4. They can identify the cations in a given mixture and separating them by analytical method.
5. Check the quality of water sample estimation of its total hardness.
6. Can investigate the purity of organic substances and prepare the derivatives of organic compounds.
7. Can learn the estimation of drugs by titrametric analysis.

S. Y. B. Sc. (Sem-IV) General Chemistry P-I

Physical Chemistry:

1. They can know the concept of Electrochemistry and phase equilibria.
2. Can draw the phase diagrams of one-component systems.

Inorganic Chemistry:

1. Can learn the properties of Transition series elements.
2. They can understand the Chemistry of Titanium and vanadium.
3. They can familiarize with the Chemistry of Coordination Compounds.
4. Can apply the eighteen electron rule to metal ions.

Organic Chemistry:

1. Student can know the reaction of carboxylic acids and their derivatives.
2. Learners can write the mechanism of Claisen condensation and Dieckmann condensation reaction.

General Chemistry P-II

Physical Chemistry:

1. Learners can know the laws of crystallography and types of crystals and also learn characteristics of simple cubic, face centered cubic and body centered cubic systems.
2. They can derive the Bragg's equation and also determine the Avogadro's number.
3. Student understands the concept of Catalysis.

Inorganic Chemistry:

1. Student can learn the behavior of ions in aqueous medium.
2. Uses and Environmental Chemistry of volatile Oxides and oxo-acids.

Organic Chemistry:

1. Student can know the importance of heterocyclic compounds and their synthesis, reaction and applications.

Basics of Analytical Chemistry P-III

1. The learner understands the importance of separation in sample treatment and various methods of separations.
2. They can learn how to select a method of separation of an analyte from the matrix
3. They know the principle of solvent extraction and effect of various parameters on solvent extraction of a solute.
4. Student can familiar with the various types of electrodes or half cells.
5. Learner understands the use of statistical methods in chemical analysis, Computation of Confidence limits and confidence interval.
6. Can know the method to draw best fitting straight line
7. Test for rejection of doubtful result

Practical's

1. Students can able to handle the analytical instruments such as conductometer, Potentiometer, Colorimeter, pH meter etc.
2. Can compare the strengths of two strong acids by studying kinetics of acid hydrolysis of methyl acetate.
3. Thorough knowledge regarding inorganic preparations.
4. They learn about qualitative Analysis of bi-functional organic compounds.
5. They familiar with the tools in analytical chemistry.
6. They can make acquainted about paper chromatography and solvent extraction techniques.

T. Y. B. Sc. (Sem-V) Physical Chemistry P-I

1. Students became familiar with rotational and vibrational spectrum for diatomic molecules and concept of Raman Spectroscopy.
2. They can learn about colligative property, and their determination methods. They also understand the concept of collision theory, study of kinetics of fast reaction.
3. They can know the concept of radioactivity, detection and measurement of radioactivity using counters, applications of radioisotopes, nuclear reactions, construction and working of nuclear reactors.
4. Idea about surface chemistry and colloidal state.

Practical's

1. Student can able to determine the molecular weight of compound by Rast method.
2. They can determine the order of reaction by fractional change method.
3. Learners can understand the adsorption of acetic acid on charcoal.
4. Students can able to handle the analytical instruments such as conductometer, Potentiometer, pH meter etc.

Inorganic Chemistry P-II

1. Student can learn about molecular symmetry and chemical bonding. They also know the concept of point group.
2. Can understand crystal lattice, lattice point, unit cell and lattice constants. Further, understands defects in solids and concept of superconductors.
3. They can learn about various properties and applications of inner transition elements.
4. They can learn the classification and characteristics of
non-aqueous solvents, comparative chemistry of Group-16 and 17.

Practical's

1. Thorough knowledge regarding inorganic preparations.
2. They also able to determine the percentage purity of water soluble salts.

Organic Chemistry P-III

1. Students can draw the mechanism of reaction, pericyclic reaction and photochemical reaction.
2. They know about stereochemistry of organic compounds, agrochemicals and heterocyclic chemistry.
3. They can write the IUPAC nomenclature of bicyclic and spiro compounds. Further, they can learn about green chemistry.
4. Student can familiarize with the general introduction of spectroscopy and natural product.

Practical's

1. Student can acquire experimental skill in the separation of organic binary mixture containing two solid components.
2. Develop the practical skill in the determination of melting point.

Analytical Chemistry P-IV

1. Students can understand the concept of quality control, quality assurance and sampling.
2. They can know the concept of Redox and Complexometric titrations.
3. Learners can familiarize with the instrumentation and application of analytical instruments such as AAS, Turbidimetry, Nephelometry etc..
4. They understand the separation methods such as solvent extraction, HPLC and HPTLC.

Practical's

1. Students can able to handle the analytical instruments such as spectrophotometer, flame photometer, turbidimeter etc.
2. They can determine the Chemical Oxygen Demands (COD) of water sample

T. Y. B. Sc. (Sem-VI) Physical Chemistry P-I

1. Student can understand the concept of electrochemical cells, classification of electrochemical cells, decomposition potential and overvoltage.
2. They can know the basic terms, classification, molar mass of polymer and its uses in light emitting polymers, antioxidants and stabilizers.
3. Student can understand the basic knowledge of quantum chemistry and renewable energy sources.
4. They learn the principles and instrumentations of NMR and ESR spectroscopy.

Practical's

1. They acquired skill for handling instruments like potentiometer, conductometer and colorimeter.
2. Student can determine the molecular weight of polymer using viscometer.
3. Can interpret the order of reaction graphically from given experimental data.

Inorganic Chemistry P-II

1. Student can understand the concept of Crystal Field Theory (CFT), Splitting of d-orbitals, calculation of CFSE and limitation of CFT.
2. They can learn the molecular orbital theory of coordination compounds, stability and reactivity of metal complexes. Introduction about electronic spectra.
3. Students can know the characteristics, synthetic methods, chemical reactions of organometallic compounds. Further, introduction of concept of metallocenes and catalysis.
4. They learn the types and general steps in metallurgy and chemistry of group 18. Also know the biological importance of metal ions (Na, K, Fe, Cu).

Practical's

1. Thorough knowledge regarding inorganic preparations.
2. They also able to determine the percentage purity of water soluble salts.

Organic Chemistry P-III

1. They can know the structure of amino acid and proteins.
2. Student can learn about mechanism of various rearrangement reactions. Further, they also get the knowledge about carbohydrates.
3. They can understand different types of spectroscopy and their applications to organic compounds. Moreover, they know the basic structure DNA/RNA.
4. They get familiarize the classification and preparation of polymers, applications of catalyst and reagents.

Practical's

1. Student can acquire experimental skill in the separation of organic binary mixture containing two solid components.
2. Develop the practical skill in the determination of melting and boiling point.

Analytical Chemistry P-IV

1. Student can understand the basic principles of Polarography, DC Polarogram, quantification, applications, advantages and limitations. Principle, advantages and limitations of amperometric titrations.
2. They can learn the chromatographic techniques such as Gas and Ion exchange hromatography.
3. Students acquire the knowledge about analysis of food products and detection of adulterants. Study of cosmetic products.
4. Students can know the instrumentation, application of TGA, DTA. Thermometric titrations and analytical method validation.

Practical's

1. They acquired skill for handling instruments like Spectrophotometer, potentiometer and pH meter.
2. Analysis of commercial sample and Ion exchange separation.
3. They understand the principle of titrimetric analysis.

T. Y. B. Sc. (Sem-V)

Applied Component (Drugs and Dyes)

1. Student can learn general introduction about drugs, routes
for drug administration and dosage form and CNS drugs.
2. They can know about the analgesic, antipyretics and anti-inflammatory drugs.
3. Student familiarize with the general knowledge of dyestuff industry, different dying methods and classification of dyes.
4. Learner can understand the color and chemical constitution of dyes, unit processes and dyes intermediates.

Practical's

1. Student can get thorough knowledge regarding the preparations and estimation of drug and dyes.
2. Student can get project knowledge of dyes.

T. Y. B. Sc. (Sem-VI) Applied Component

(Drugs and Dyes)

1. Student get familiarize with the drugs discovery, drug design and its developments.
2. They can known about chemotherapeutic agents such as Anti-amoebic, anti-tubercular, anti-neoplastic, anti-HIV and nano particles in medicinal chemistry.
3. Student can learn about classification of dyes and environmental hazardous of synthetic dyes.
4. They can understand the non-textile uses of dyes such as biomedical, food and cosmetics. Further, paper, leather,hair, laser and indicator dyes.

Practical's

1. Student can get thorough knowledge regarding the
preparations of drug and dyes.
2. Student can get knowledge of TLC of mixture of dyes.
3. Student can prepare the monograph of drugs.

Department of Botany

PROGRAM SPECIFIC OUTCOMES: BOTANY

1. Identify the different groups of botany and appreciate plant diversity
2. Understand the importance of plants, their diversity and its conservation.
3. Understand the current developments in the different areas of botany
4. Understand contribution of botany in increase and improve our supply of medicines, food, fibers and other plant products.
5. Understand health and environmental protection and to solve the pollution problems.
6. Understand knowledge of botany is an essential pre-requisite for the pursuit of many applied sciences like Agriculture, Horticulture, Sericulture, Forestry, Pharmacology and Medicine.
7. Analyze and apply the methodologies and techniques learnt during the course of studying botany
8. Share social and environmental consciousness with their fellow citizens.
9. Organize and deliver relevant applications of knowledge through effective written, verbal, graphical/virtual communications and interact productively with people from diverse backgrounds

BOTANT COURSE OUTCOMES

CO. 101 F. Y. B. Sc. Sem I - Paper I -Plant Diversity

- ✓ Understand the diversity among Algae.
- ✓ Know the systematic, morphology and structure, of Algae.
- ✓ Understand the life cycle pattern of Algae.
- ✓ Understand the useful and harmful activities of Algae.
- ✓ Understand the Biodiversity of Fungi
- ✓ Know the Economic Importance of Fungi
- ✓ Understand the morphological diversity of Bryophytes.
- ✓ Understand the economic importance of the Bryophytes.

CO.102. F. Y. B. Sc. sem-I –Paper II –Form and function-I

- ✓ To understand basic units of the organism.
- ✓ To know components of the cell and their division.
- ✓ To differentiate the organism by its cell structure.
- ✓ To understand energy pyramids in detail.
- ✓ To know the various types of ecosystem.
- ✓ To understand the “Science of Heredity”.
- ✓ To understand linkage, segregation and mutation of genes.
- ✓ To understand phenotypic,genotypic ratios and epistatic,non-epistatic interactions.

CO. 201. F. Y. B. Sc. Sem- II- Paper-I Plant Diversity-I

- ✓ Identify different plant groups using representative life forms.
- ✓ Understand similarities & differences among these groups at least at macroscopic level.
- ✓ Appreciate their economic importance, ecological & environmental significance.
- ✓ Understand Angiosperm plant families and their economic importance
- ✓ Understand leaf and inflorescence morphology

CO.202 F.Y. B. Sc. Sem II Paper II Form And Function I

- ✓ To study simple tissues and complex tissues.
- ✓ To study primary structure of dicot and monocot root, stem, leaf.
- ✓ To study epidermal tissue system such as types of hair and stomata.
- ✓ To study photosynthesis in detail.
- ✓ To understand light reaction, photolysis of water and photophosphorylation pathway.
- ✓ To know concept of primary and secondary metabolites and difference between
- ✓ primary and secondary metabolites.
- ✓ To study the various types of medicinal plants and their uses.

CO.301. S. Y. B. Sc. Sem- III- Paper-I Plant diversity-II

- ✓ Understand Modern Techniques to study of Plant Diversity
- ✓ Identify different plant groups using representative life forms.
- ✓ Understand the diversity of Brown Algae
- ✓ Know the systematic position, range of variation and economic importance of brown algae.
- ✓ Know the systematic position and life cycle of Bryophytes
- ✓ Have a better understanding of plant morphology terminology.
- ✓ Understand Angiosperm plant families and their economic importance
- ✓ Understand the nomenclatural problems.

CO.302 S.Y. B. Sc. Sem III Paper II Form And Function II

- ✓ To understand the basic unit of the organism.
- ✓ To differentiate the organism by its cell structure.
- ✓ To know components of the cell and their division.
- ✓ Provide an understanding of the laboratory methods used to identify and analyse.
- ✓ To understand cytogenetics alteration and relationship to specific clinical expression.

CO. 303. S. Y. B. Sc. Sem-III - Paper III -Current Trends in Plant Science

- ✓ The study of Economic botany helps to the importance and uses of plant and plant parts.
- ✓ Ethonbotany give a chance to familiarize the traditionally useful medicinal plants.
- ✓ To equip the students with skills related to laboratory as well as industries based
- ✓ studies.
- ✓ Understand the role plants in human welfare.
- ✓ Gain knowledge about various plants of economic use.
- ✓ Know importance of plants & plant products.
- ✓ Understand the chemical contents of the plant products.
- ✓ Know about the utility of plant resources.
- ✓ Forestry provides a focused lense through which to understand, influence and practice
- ✓ sustainable resource management and utilization, as well as sustainable development.
- ✓ Become aware of applications of different plants in various industries.
- ✓ To highlight the potential of these studies to become an entrepreneur.

CO. 401. S. Y. B. Sc. Sem-IV- Paper I - Plant Diversity

- ✓ Understand the Biodiversity of Fungi
- ✓ Know the Economic Importance of Fungi.
- ✓ Know the terminologies in plant pathology.
- ✓ Understand the scope and importance of Plant Pathology.
- ✓ Know the prevention and control measures of plant diseases and its effect on economy
- ✓ of crops.
- ✓ Understand the morphological diversity of Pteridophytes and Gymnosperms.
- ✓ Understand the economic importance of the Pteridophytes and Gymnosperms.
- ✓ Know the evolution of Pteridophytes and Gymnosperms.
- ✓ Know the scope of Paleobotany, types of fossils, its role in global economy and
- ✓ geological time scale.
- ✓ Understand the various fossil genera representing different fossil groups.

CO.402-S.Y.B.Sc.sem-IV-paper-II-Form and function-II

- ✓ To study the normal secondary growth in dicotyledonous stem and root.
- ✓ To understand the mechanical tissue system in detail.
- ✓ To study the types of vascular bundles.
- ✓ To understand the process of respiration and their pathways.
- ✓ To study the process of photorespiration and photoperiodism in detail.
- ✓ To study biogeochemical cycles includes carbon,Nitrogen and water in detail.
- ✓ Study of ecological factors,soil as edaphic factor and their types.
- ✓ To study the community ecology in detail.

CO. 403. S. Y. B. Sc. Sem- IV- Paper-III Current Trends in Plant Sciences-I

- ✓ Understand the types and locations of gardens
- ✓ Know the national parks and botanical gardens
- ✓ Understand the plant tissue culture techniques
- ✓ Understand the gene cloning and vector used for gene cloning
- ✓ Know the chi square test and coefficient of correlations
- ✓ Understand the bioinformatics, BLAST and bioinformatics programme in India

CO. 501. T. Y. B. Sc. Sem-V- Paper I - Plant Diversity

- ✓ Over view of the microbial world, its structure and function.
- ✓ Familiar with the tools and techniques used in Microbiology.
- ✓ Familiarize the learner with the applied aspects of microbiology.
- ✓ Understand the concept, principle and types of sterilization methods.
- ✓ Developing interest in plant diversity.
- ✓ Developing skill of identification of Algae, Fungi.
- ✓ To study in depth about algae and fungi.
- ✓ Know the terminologies in plant pathology
- ✓ Understand the scope and importance of Plant Pathology
- ✓ Know the control measures of plant diseases.
- ✓ Studying basic knowledge of pathogens, diseases and their control.

CO. 502. T. Y. B. Sc. Sem- V- Paper-II Plant Diversity -IV

- ✓ Understand the fossil genera of plants
- ✓ Have a better understanding of plant morphology terminology
- ✓ Understand Angiosperm plant families & respective genera using proposed
- ✓ classification systems & standard floras & use identification keys
- ✓ Understand key methods and principles of angiosperm classification
- ✓ Understand anomalous secondary growths of stem and roots of plants
- ✓ To study of pollen morphology, analysis and viability

CO.503-T.Y.B.Sc.sem-V-Paper-III-Form and function-II

- ✓ To study the structure and functions of cell organalles in detail.
- ✓ To understand the giant chromosome and their types.
- ✓ To understand the concept of genetic code and process of transcription and translation
- ✓ in eukaryotes.
- ✓ To study the water relations in plants and solute transport.
- ✓ To study the translocation of solutes and their models in detail.
- ✓ To study the process of bioremediation and phytoremediation in detail.
- ✓ To understand the plant sucession and their poly and monoclimax theories.
- ✓ To study the micropropogation techniques and plant cell suspension culture for the
- ✓ production of secondary metabolites.
- ✓ To study the techniques of protoplast fusion and somatic hybridization.

CO.504. T. Y. B. Sc Sem V Paper IV Current Trends In Plant sciences I

- ✓ To explain basic concept about ethnobotany.
- ✓ To express the historical development of ethnobotany.
- ✓ To explain the construction of c DNA and genomic library.
- ✓ To understand the step involved in recombinant DNA technology.
- ✓ Introduce the basic concept of qualitative analysis of a given sample.
- ✓ Discuss the terms, principle, instrumentation operation of spectroscopic techniques.
- ✓ To study medicinal plant and their uses.

CO. 601. T. Y. B. Sc. Sem-VI - Paper I -Plant Diversity

- ✓ Interpret the performance characteristics and life cycles of various lower plants.
- ✓ Developing skill of identification of Bryophytes, pteridophytes and Gymnosperms.
- ✓ Diversity in vascular plant.
- ✓ Characters of vascular plants and classification of plants.
- ✓ External & internal characters of plants.
- ✓ Aware the students to understand the evolution and its importance.

CO. 602. T. Y. B. Sc. Sem- VI- Paper-II Plant Diversity -IV

- ✓ To study of Major Botanic gardens of India
- ✓ Know the regional circles of botanical survey of India
- ✓ Understand Angiosperm plant families & respective genera using proposed
- ✓ classification systems & standard floras & use identification keys.
- ✓ Understand Hutchinson's classification
- ✓ Understand embryology and development of embryo in plants
- ✓ Study anatomical peculiarities of different groups by using live specimens and micro
- ✓ preparation.

- ✓ Understand biostatistics, regression and ANOVA

C0.603-T.Y.B.Sc.sem-VI-Paper-III-Form and function-III

- ✓ To study the structure and of biomolecules includes carbohydrate, lipid and protein in
- ✓ detail.
- ✓ To understand the structure of enzymes, their nomenclature and types in detail.
- ✓ To study the Nitrogen metabolism includes nitrogen cycle, root nodule formation, and
- ✓ nitrogenase activity.
- ✓ Physiological effects and applications of auxin, gibberellins, cytokinins and abscissic
- ✓ acid.
- ✓ To study the genetic mapping in eukaryotes, genetic linkage, three point crosses and
- ✓ their problems.
- ✓ To study the gene mutations, types of mutations in detail.
- ✓ To understand the metabolic disorders caused by genetic mutations.
- ✓ To study the organization of biological data and databases, BLAST.
- ✓ To study the protein structure analysis, multiple sequence analysis and phylogenetic
- ✓ analysis.

CO.604.T. Y. B. Sc Sem VI Paper IV Current Trends In Plant sciences II

- ✓ To understand the step involved in recombinant DNA technology.
- ✓ To study various techniques of DNA sequencing.
- ✓ To study DNA barcoding and its basic features.
- ✓ To study various phytogeographical regions of India with respect to definition, diversity
- ✓ of flora found in various forest types of India.
- ✓ To study evolution of biodiversity.
- ✓ To study methods of extraction of essential and fatty oils.
- ✓ To study drying oil semidrying oil non-drying oil.
- ✓ To study storage and preservation techniques of fruits and vegetable.

CO. H501. T. Y. B. Sc. Sem- V- Applied component of Horticulture-I

- ✓ Introduction to Horticulture and understand various branches of Horticulture
- ✓ Understand apiculture and sericulture
- ✓ Know the horticultural institutes of India and government schemes
- ✓ Understand artificial plant propagation practices
- ✓ To know the vegetative plant propagation practices
- ✓ Know the seed propagation and methods.
- ✓ Understand tissue culture in relation to horticulture
- ✓ To study the importance of Manures, Fertilizers, biofertilizers and their various types.
- ✓ To study the various types of diseases and their control measures.
- ✓ To study the common pests on horticultural crops.
- ✓ To study the friends of farmers such as earthworm, snakes and predaceous fungi.

CO. H602. T. Y.B. Sc. Sem-VI- Paper II - Horticulture and Gardening

- ✓ Horticulture focuses on fruit, vegetables, flowers, and landscape plants.
- ✓ Understand the role plants in human welfare.
- ✓ Gain knowledge about various plants of economic use.

- ✓ Know importance of plants & plant products.
- ✓ Understand the chemical contents of the plant products.
- ✓ To be challenged intellectually, to work in a job they love, and to make a difference in
- ✓ the quality of life for countless others.
- ✓ To study of commercial production of propagation includes tubers of potato,
- ✓ vegetables-Tomato and their post harvest management.
- ✓ To study the post harvest management in fruits includes Mango, Grapes and coconut.
- ✓ To understand the propagation techniques in spices or condiments.
- ✓ To study the medicinal and aromatic plants and their uses.

Department of Zoology

Program Specific Outcomes

1. Improving the knowledge about criteria for animal classification.
2. Study of salient features of chordates and non-chordates.
3. Improving the knowledge of animals about their special adaptations and evolutionary relationship.
4. Scientific study of their nature of habitant with environment.
5. Improving information about external morphology and anatomy of animals including human being.

Course Outcomes

B.Sc.I. (Sem.I) Paper I - USZO101 (Course 1)

Wonders of Animal World, Biodiversity and its Conservation

1. Understanding the arrangement of organism or groups of organism in distinct categories in accordance with particular & well established plan.
2. Explanation of unity in diversity of organism.
3. Studying specific & scientific names to organism.
4. Collecting information about useful and harmful animals, helps in understanding the nature of habitant. .Curiosity will be ignited in the mind of learners, to know more about the fascinating world of animals which would enhance their interest and love for the subject of Zoology.

B.Sc.I. (Sem.I) Paper Il - USZO102 (Course 2)

INSTRUMENTATION and ANIMAL BIOTECHNOLOGY

1. Learners would work safely in the laboratory and avoid occurrence of accidents which will boost their scholastic performance and economy In use of materials/chemicals during practical sessions.
2. Lerners would understand recent advances in the subject and their applications for the betterment of mankind.
3. Students will be skilled to select and operate suitable instruments for the studies.

B.Sc.I. (Sem.lI) Paper I USZO201 (Course: 3)

Ecology and Wildlife Management

1. This would allow learners to study about nature of animal population, specific factors affecting its growth and its impact on the population of other life form.
2 .Learners will grasp the concept of interdependence and interaction of physical, chemical and biological factors in the environment.
3 .will lead to better understanding about implications of loss of fauna specifically on human being, erupting spur of desire for conservation of all flora and fauna.

B.Sc.I. (Sem.lI) Paper II - Course: 4 [USZO 202]

NUTRITION, PUBLIC HEALTH AND HYGIENE

1. Healthy dietary habits would be inculcated in the life style of learners in order to prevent risk of developing health hazards in younger generation due to faulty eating habits.
2.To promote optimum conservation of water, encouragement for maintaining adequate personal hygiene, optimum use of electronic gadgets, avoiding addiction, thus facilitating achievement of the goal of healthy young India in true sense
3. Learners will be able to promptly recognize stress related problems at initial stages and would be able to adopt relevant solutions which would lead to psychologically strong mind set.
4.To promote positive attitude important for academics and would be able to acquire knowledge of cause.

B.Sc.II. (Sem.III) Paper I - USZO301 (Course-V)

Fundamentals of Genetics, Chromosomes and Heredity, Nucleic acids

1. Learner would comprehend and apply the principles of inheritance to study heredity.
2. Learner will understand the concept of multiple alleles, linkage and crossing over.
3. Learner will comprehend the structure of chromosomes and its types.
4. Learner will understand the mechanisms of sex determination
5. Learner would be able to correlate the disorders linked to aparticular sex chromosome.
6. Learner will understand the importance of nucleic acids as genetic Material.

B.Sc.II. (Sem.III) Paper II - USZO302 (COURSE-VI)

Nutrition and Excretion, Respiration and Circulation, Control and Coordination of Life Processes, Locomotion and Reproduction

1. Learner would understand the increasing complexity of nutritional ,excretory and osmoregulatory physiology in evolutionary hierarchy.
2. Learner would be able to correlate the habit and habitat with nutritional, excretory and osmoregulatory structures.

3. Learner would understand the increasing complexity of respiratory and circulatory physiology in evolutionary hierarchy
4. Learner will be able to correlate the habit and habitat of animals with respiratory and circulatory organ.
5. To introduce the concepts of physiology of control and coordination, locomotion and reproduction.

B.Sc.II. (Sem.III) Paper III –

USZOE1303 (COURSE-VIIA) ELECTIVE 1

Ethology, Parasitology, Economic Zoology

1. Learner would gain insight into different types of animal behaviour and their role in biological adaptations
2. Learner would be sensitized to the feelings which are instrumental in social behaviour..
3. Learner would understand the general epidemiological aspects of parasites that affect humans and take simple preventive measures for the same.

4 Learner would comprehend the life cycle of specific parasites, the symptoms of the disease and its treatment

5. Learner would comprehend the life cycle of specific parasites, the symptoms of the disease and its treatment

B.Sc.II. (Sem.IV) Paper I – USZO401 (COURSE-VIII)

Origin and Evolution of Life, Population Genetics and Evolution, Scientific Attitude, Methodology, Scientific Writing and Ethics in Scientific Research

1. Learner will gain insights into the origin of life
2. Learner will analyse and critically view the different theories of Evolution
3. Learner would understand the forces that cause evolutionary changes in natural populations
4. Learner would comprehend the mechanisms of speciation.

5 Learner will be able to distinguish between microevolution, macroevolution and megaevolution.

6. The learner would develop qualities such as critical thinking and analysis
7. The learner will imbibe the skills of scientific communication and he/she will understand the ethical aspects of research

.

B.Sc.II. (Sem.IV) Paper II – USZO402 (Course - IX)

Cell Biology, Endomembrane System, Biomolecules

1. Learner would acquire insight into the composition of the transport mechanisms adopted by the cell and its organelles for its maintenance and composition of cell.
2. Learner would appreciate the intricacy of endomembrane system
3. Learner would understand the interlinking of endomembrane system for functioning of cell
4. The learner will realize the importance of biomolecules and theirclinical significance

B.Sc.II. (Sem.IV) Paper III – USZOE1403 (Course-XA) Elective 1

Comparative Embryology, Aspects of Human Reproduction, Pollution and its effect on organisms

1. Learner will be able to understand and compare the different types of eggs and sperms
2. Learner will be able to understand and compare the different pre- embryonic stages
3. Learners will able to understand human reproductive physiology
4. Learners will become familiar with advances in ART and related ethical issues
5. The learners will be sensitized about the adverse effects of pollution and measures to control it..