

Name of the Department

- 1. English**
- 2. Marathi**
- 3. Hindi**
- 4. Botany**
- 5. Chemistry**
- 6. Computer Science**
- 7. Environmental Science**
- 8. Mathematics**
- 9. Microbiology**
- 10. Physics**
- 11. Zoology**
- 12. Physical Education**
- 13. Psychology**
- 14. Home Science**
- 15. History**
- 16. Political Science**
- 17. Sociology**
- 18. Economics**
- 19. Commerce**
- 20. BCA**
- 21. B. Voc. (Live Stock Production & Management)**

Department of English

The Course Outcomes:

First Year of BA

Compulsory English:

After having completed a course in compulsory English, the learners developed:

1. An understanding of the English language so far.
2. An understanding of the basics of English grammar.
3. An understanding of composition.
4. An understanding of electronic communication.

Optional English:

After having completed a course in optional English entitled “The Structure of English”, the learners developed:

1. An understanding of phonetics.
2. Proper pronunciation of English.
3. An understanding of basics of advanced English grammar.

Third Year of BA

Introduction to Literary Criticism and Terms:

Having completed a course in “Introduction to Literary Criticism and Terms”, the learners developed:

1. Critical understanding.
2. Analytical ability.
3. Awareness of figurative language.
4. Awareness about eminent critics of the world.

Project Work on History of English Literature:

After completing a course in “History of English Literature”, the learners developed:

1. An understanding of preparation of research projects.
2. An understanding of research methodology.
3. Insights into research in language and literature.

The Programme Outcomes

After completing the programme of **Bachelor of Arts** with English as their main subject, the learners could:

1. Move for advanced education in the subject of English.
2. Develop critical thinking, and understanding of literature.
3. Develop communication skills in English.
4. Develop awareness of research in language and literature.
5. Develop insights into research and research methods.
6. Be competent at English.



Department of Marathi

पदवी व पदव्युत्तर अभ्यासक्रम

अभ्यास पत्रिके सह

पेपर 1 या अभ्यास पत्रिकेतून मानवी भावभावनांचे मूल्य रुजविले जाते परिणामस्वरूप समाजात मानवतावाद रुजविल्या जातो

पेपर 2 या अभ्यास पत्रिकेतून दृकश्राव्य माध्यमाद्वारे सामाजिक प्रश्नांची जाणीव विद्यार्थ्यांना करून दिली जाते

पेपर 3 या अभ्यास पत्रिकेतून मनोरंजनाबरोबरच उद्बोधन प्रबोधन केले जाते

पेपर 4 या अभ्यास पत्रिकेतून विद्यार्थ्यांच्या सर्वांगीण विकासासाठी विविध कौशल्यांचा विकास साधला जातो

पेपर 5 या अभ्यास पत्रिकेतून समाजाच्या जडणघडणीचा इतिहास उलगडून भूतकाळावरून भविष्याचा वेध घेतला जातो

पेपर 6 या अभ्यास पत्रिकेतून विद्यार्थ्यांनी प्रति कौशल्य विकसित केले जातात

पेपर 7 या अभ्यास पत्रिकेतून महामानवांचे चरित्र आत्मचरित्र वाचून सामान्यजनांना व विद्यार्थ्यांना प्रेरणा मिळते

पेपर 8 या अभ्यास पत्रिकेतून व्यवसाय कौशल्य विकसित केली जातात

पेपर 9 या अभ्यास पत्रिकेतून विद्यार्थ्यांना नैतिक मूल्यांची शिकवण दिली जाते

पेपर 10 या अभ्यास पत्रिकेतून विद्यार्थ्यांचे भाषिक कौशल्य विकसित करून भाषिक ज्ञान विकसित केले जातात

पेपर 11 या अभ्यास पत्रिकेतून विद्यार्थ्यांवर भक्ती समर्पण व संस्काराची रुजवण केली जाते

पेपर 12 या अभ्यास पत्रिकेतून विद्यार्थ्यांना संशोधन कौशल्यांची ओळख करून दिली जाते

पेपर 13 या अभ्यास पत्रिकेतून पाश्चात्य साहित्य मूल्यांची ओळख करून दिली जाते

पेपर 14 या अभ्यास पत्रिकेतून प्रत्यक्षात संशोधन कौशल्य व मूल्ये शिकविली जातात

पेपर 15 या अभ्यास पत्रिकेतून विविध साहित्यातील रसांची ओळख करून दिली जाते

पेपर 16 या अभ्यास पत्रिकेतून संशोधन मूल्ये प्रकल्प कार्य संशोधन कार्य मुलाखत इत्यादी व्यावसायिक कौशल्य साधली जातात

पेपर प्रथम वर्ष बीए बीकॉम बीएस्सी (द्वितीय भाषा मराठी)

या अभ्यास पत्रिकेतून विविध कथा(गद्य) कविता (पद्य) या माध्यमातून विविध नैतिक व मानवी मूल्यांची ओळख करून दिली जाते तसेच ती मुले समाजात रुजविण्याची विद्यार्थ्यांची मानसिकता तयारही केली जाते

पेपर द्वितीय वर्ष बीए बीकॉम बीएस्सी(द्वितीय भाषा मराठी)

या अभ्यास पत्रिकेतून ज्ञान मनोरंजनाबरोबरच प्रबोधनाची मूल्य विकासित केली जातात

पदव्युत्तर विभाग

पेपर 1 अभ्यास पत्रिके मधून समाजमनाची दर्शन घडविले जाते

पेपर 2 अभ्यास पत्रिके मधून साधक-बाधक चर्चा करून साहित्यमूल्य रुजविले जातात

पेपर 3 या अभ्यासक्रमातील विद्यार्थ्यांचे लेखन कौशल्य प्रगत केली जाते

पेपर 4 या अभ्यास पत्रिकेतून मानवतावादी दृष्टिकोन रुजविणे

पेपर 5 विविध वाङ्मयीन मूल्यांचा विकास घडवून आणणे

पेपर 6 विविध कलाकृतींचा दर्जा ठरवून वाचन संस्कृती रुजवली जाते

पेपर 7 लेखन कौशल्य विकसित केले जाते

पेपर 8 व्यक्तिमत्व विकासाची जडणघडण करणे

पेपर 9 विविध भाषेत कौशल्य जतन करणे

पेपर 10 दलित आदिवासी समाज दर्शन घडविणे

पेपर 11 लोकसाहित्यातून पारंपारिक मूल्यांची रुजवण केली जाते

पेपर 12 प्रादेशिकतेचे दर्शन घडविणे

पेपर 13 भाषेचे महत्व अधोरेखित केले जाते

पेपर 14 ग्रामीण संस्कृती आणि स्त्री पुरुष समानता मूल्य रुजविले जाते

पेपर 15 या अभ्यास पत्रिके मधून मूल्याची देवाण-घेवाण केली जाते

पेपर 16 या अभ्यास पत्रिकेतून भाषेची शास्त्रशुद्धता स्पष्ट केली जाते

Department of Hindi

बी.ए.बी.एस्सी द्वितीय वर्ष प्रश्नपत्र-०३ तथा ०४
सामान्य हिंदी-३ तथा ०४

उद्देश :

- १) साहित्य आस्वादन अभिरुची का परिसंस्कार
- २) जीवन मूल्यों के प्रति आस्था
- ३) अत्याधुनिक इलेक्ट्रॉनिक माध्यमों का परिचय
- ४) भाषा प्रायोगिकी - विज्ञापन कला व ज्ञान

बी.ए. द्वितीय एंच्छिक : प्रश्नपत्र -०५ तथा ०६ कथेत्तर गद्यसाहित्य /
प्रयोजनयुक्तक हिंदी

उद्देश :

- १) हिंदी साहित्य में अभिरुची में वृद्धि
- २) जीवन मूल्यों के प्रति आस्था
- ३) हिंदी कथेत्तर गद्य संवेदना परम्परा का परिचय
- ४) हिंदी भाषा के विविध रूपों का परिचय
- ५) राजभाषा हिंदी के विभिन्न पहलुओं का परिचय
- ६) प्रयोजनयुक्त भाष्य तथा अनुवाद का परिचय

आधुनिक हिंदी कविता / प्रयोजनयुक्तक हिंदी प्रश्नपत्र — ०७ तथा

उद्देश :

- १) हिंदी पद्य संवेदना की परम्परा से परिचय
- २) हिंदी पद्य संवेदना की परम्परा से परिचय
- ३) राजभाषा हिंदी का परिचय
- ४) पारिभाषिक शब्दावली से अवगत कराना

बी.ए.बी.कॉम., बी.एस्सी. प्रथम सत्र (प्रश्नपत्र-०१)- प्रथम वर्ष सामान्य हिंदी

— प्रश्नपत्र ०१ तथा ०२

उद्देश :

- १) संवेदना का विकास
- २) भाषा कौशल का विकास
- ३) कथा साहित्य के प्रति अभिरुची

बी.ए. प्रथम ऐच्छिक हिंदी, प्रश्नपत्र-०१ तथा ०३ उपन्यास साहित्य / हिंदी

गद्य साहित्य

उद्देश :

- १) सामान्य आस्वादन और अभिरुची का परिसंस्कार
- २) जीवन मूल्यों के प्रति आस्था
- ३) उपन्यास साहित्य का अध्ययन
- ४) लेखन तथा भाषण कौशल का विकास

एकांकी साहित्य / नाटक साहित्य (प्रश्नपत्र : ०२) तथा ०४

उद्देश :

- १) हिंदी नाटक तथा रंगमंच का अध्ययन
- २) संवेदना का विकास
- ३) नाट्यास्वादन तथा नाट्यालोचन क्षमता का विकास

बी.ए.तृतीय वर्षे प्रश्नपत्र ०९ तथा १०/११/१२
प्रादेशिक साहित्य / आदि मध्यकालीन हिंदी साहित्य का इतिहास /
साहित्यशास्त्र / प्रकल्प कार्य

उद्देश :

- १) प्रादेशिक साहित्य का ज्ञान
- २) भारतीय साहित्य का अध्ययन
- ३) हिंदी साहित्य परम्परा का परिचय
- ४) हिंदी संत परम्परा का परिचय
- ५) साहित्य चिंतन का अध्ययन
- ६) साहित्यलोचन क्षमता का परिचय
- ७) पठन लेखन कौशल का विकास
- ८) आलोचनात्मक क्षमता का विकास
- ९) अनुसंधानात्मक दृष्टी का विकास

प्रश्नपत्र : १३/१४/१५/१६

मध्यकालीन / आधुनिक हिंदी साहित्य का इतिहास / साहित्यशास्त्र / प्रकल्पकार्य

उद्देश :

- १) भारतीय भक्ती आंदोलन का अध्ययन
- २) रितीकालीन संवेदना का अध्ययन
- ३) कविता की संवेदना का अध्ययन
- ४) हिंदी साहित्य परम्परा का परिचय
- ५) जीवनमुल्यों के प्रति आस्था
- ६) साहित्य के प्रमुख विद्याओं का परिचय
- ७) समिक्षात्मक दृष्टी का विकास
- ८) संशोधन अभिवृत्ति विकसित करना

Department of Botany

Programme Outcomes (POs)

PO1 - Students can reveal the medicinal properties of plants in the socioeconomic values of identified plant sciences and to spread information on different parts of beneficial plants and proper examinations on human health issues.

PO2 -Obtain incredible opening to improve the plant science knowledge on Plant Diversity and ecological measurement of vascular cryptogams and Angiosperms and to study the plant kingdom.

PO3 -Gain information and appreciate the range of plant diversity in terms of structure, function and environmental relationship from primitive to highly evolved plant groups.

PO4 -Gather knowledge on various physiological and biochemical pathways and their vital role in biotic factors.

PO5 -Apply reasonable information on the implication of ethical natural standards and resulting duties applicable to biodiversity protection, practical and practicable utilization of plants.

PO6 - The study of botany will deliver a good knowledge about Microbiology, Phycology, Taxonomy, Molecular Biology, Medicinal plants, and Plant Tissue Culture and Ecological distributions.

PO7 - Information on conservation of plant resources and different hotspots expand studies to explore their helpful qualities economically, socially and aesthetically.

PO8 -Practice look into research-based information and research methods including the lab experiments, analysis and data prediction, information, and advancement of the data to provide a substantial end

Programme Specific Outcomes (PSOs)

PSO1 - Students can apply the information and relate the data gained from the related subjects viz; Zoology and Chemistry, to describe and determine through the interdisciplinary approaches.

PSO2 – Through scientific classification, the students understand about the plant groups and binomial names, economic consequence including the utilizations and varieties among numerous types of Angiosperms.

PSO3 - The students improve knowledge on the pathways of metabolisms, transport and translocation of water and solutes and biochemical parameters like carbohydrate, protein and lipid.

PSO4 - The students will have the choice to secure great academic information on the science of fossils and living plants along with their relations with their condition in the environment.

PSO5- Apply the medicinal and economic knowledge of Bryophytes, Pteridophytes and Gymnosperms for the benefit of human welfare.

Course Outcomes (COs)

Semester -I

Paper I

(Diversity of Cryptogams - I)

CO1- Differentiate and identify the algal species using algal pigments.

CO2- Know about the distribution and mode of nutrition on fungal species.

CO3- Apply knowledge on lichen as indicators of pollution.

CO4- Enlarge the knowledge of Lichen and its functions.

CO5- Recognize the morphology, anatomy , physiology, reproduction and lifecycle pattern.

CO6- Their diversification and familiarize with various ecological niche.

CO7- Understand the life cycle pattern of Algae.

CO8- Know the Economic Importance of Fungi

Paper - II

(Morphology of Angiosperms)

CO1- Know the vegetative characteristics of the plant.

CO2- Learn about the reproductive characteristics of the plant.

CO3- Understand the plant morphology and basic taxonomy.

CO4- Understand the habit of the angiosperm plant body.

CO5-explain external morphological structure and function of leaves and flowers

CO6- Identifies parts of leaves and flowers

CO7 Explains leaf metamorphosis and leaf arrangement

CO8-Explains inflorescence and sex distribution in the flower.

Semester – II

Paper - V

(Diversity of Cryptogams - II)

CO1-Understand the morphological diversity of Bryophytes.

CO2- Understand the economic importance of the Bryophytes.

CO3- understand the life cycle pattern of Bryophytes, Pteridophytes and Gymnosperms

Explore the knowledge on Plant diversity i.e. Bryophytes, Pteridophytes and Gymnosperms.

CO4- understands the internal structure and reproduction of Cryptogams and Phanerogams.

Semester - II

Paper - VIII

(Histology, Anatomy and Embryology)

CO1- Know about plants anatomical structure, their developmental patterns.

CO2- Plant reproductive parts development of male, female gametophytes and fruits.

CO3-Vascular tissues and its constituents by sections and maceration, wood anatomy, TS, TLS and RLS

CO4- Mechanical tissues (Collenchyma, Sclerenchyma, Stone cells and Xylem) , Secretary Tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands), laticifers (Latex cells and Vessels).

CO5-Normal and abnormal secondary growth etc.

Semester - III

Paper - X

(Plant Ecology)

CO1-On completion of this course the students are able to analyze various types of ecosystems, Correlate different ecosystems.

CO2- analyzes the threat and recommends conservative measures.

CO3- The students are also accomplished in the environmental impact analysis

CO-4 Students are able to analyze, monitor various physical, chemical and biological properties of soil water and air.

Semester - III

Paper - XI

(Taxonomy of Angiosperms)

CO1- Description of a plant specimen.

CO2- Study of locally available families of flowering plants.

CO3- Identification of genus and species of locally available wild plants.

CO4- Preparation of botanical keys at generic level by locating key characters.

CO5- Knowledge of at least 10 medicinal plant species.

CO6- Knowledge of secondary metabolites and its use in taxonomy.

CO7- To learn the wide activities in angiosperm and trends in classification.

CO8- Learn about the characters of biologically important families of angiosperms.

Semester - IV

Paper - XIII

(Gymnosperms and Utilization of Plants)

CO1-Differentiate the lower forms and advanced Thallophytic and its vegetative and reproductive parts.

CO2- Analyze the internal organization of Cryptogams and Phanerogams.

CO3- To know about morphological, anatomical and developmental patterns in the bryophytes, pteridophytes and gymnosperms.

CO4- To know about the reproductive parts their development and mechanism of reproduction and life cycle pattern.

Semester IV

Paper XIV

(Plant Physiology)

CO1-The students are able to isolate starch, pectin and various nutritive products from the plants.

CO2-Also the role of enzymes in it and mechanism of photosynthesis, respiration, nitrogen and lipid metabolism.

CO3- Understand the Biochemical nature of cell. Know the chemical nature of biomolecules

CO4- Learn about the movement of sap and absorption of water in plant body and Understand the plant movements.

CO5- Understand the different types of interaction in Biomolecules.

CO6- Demonstrate various physiological experiments.

Semester -V

Paper XV

(Cell Biology & Molecular Biology)

CO1- The cell structures in relation to function of cells the fundamental unit of life, are concerned in this course along with molecules present in cells.

CO2- Apply the principles of cell biology in designing experiment, statistical analysis, and Understanding of results

CO3- Operate and solve exercise using computation statistics software.

CO4- Get acquainted with basic approach in the research methodology.

Semester – V

Paper XVI

Plant Pathology

CO1- Understand the concept, principle and types of sterilization methods.

CO2- Know the concept and characteristics of antiseptic, disinfectant and their mode of action.

CO3- Know the cultivation methods of bacteria, yeast, fungi and virus.

CO4- Principle, working and applications of instruments viz, pH meters, spectrophotometer, centrifuge, viscometer, and laminar air flow.

CO5- Understand the Microbial Genetics and Recombination in Bacteria.

CO6- Know the terminologies in plant pathology. Understand the scope and importance of Plant Pathology.

Semester -VI

Paper: XIX

Genetics and Biotechnology

CO1- Media preparation techniques for different plants and Sterilization techniques for media as well as for explants. Explant Culture. Anther culture, Pollen culture, Micro propagation. Embryo rescue

CO2- Meiotic behavior of monosomy, trisomy in plants and its effect. and Chromosomal behavior in mutagen treated plants.

CO3-Chromatin organization, Structural and Numerical alterations in chromosomes

Know about Equipment's required in Tissue culture Lab

Semester –VI

Paper XX

Microbiology and Disease Management.

CO1- Explain how plant diseases are classified by symptoms displayed on plants. Analyze a disease situation and determines the best cultural, mechanical, and biological control methods used to manage the plant disease.

CO2-Distinguish between the various integrated pest management strategies for plant disease management. Know the prevention and control measures of plant diseases and its effect on economy of crop

CO3- Know the terminologies in plant pathology. Understand the scope and importance of Plant Pathology.

CO4- Know the prevention and control measures of plant diseases and its effect on economy of crops.

Department of Chemistry

Programme Specific Outcomes (PSOs)

- PSO01:** Students understand the basic principles of chemical sciences.
- PSO02:** Students acquire the knowledge of basic and applied chemistry.
- PSO03:** Study of physical properties of matter - melting point, boiling point, surface tension, viscosity, optical activity etc.
- PSO04:** The obtained knowledge is quite promising and forms the foundation of advanced knowledge in further higher education.
- PSO05:** Students understand basic mathematical concept and their applications in practical.
- PSO06:** Students understand different methods of compound analysis .
- PSO07:** Students understand the role of chemistry in daily life.
- PSO08:** Students learn the chemical composition of some of the products of routine use –fats, oils, soaps etc.
- PSO09:** Students can handle basic and modern instruments independently.
- PSO10:** Students understand and follow safe laboratory practice.
- PSO11:** Students learn problem solving approach.

PSOs of M.Sc. Chemistry

- PSO01:** Students can apply the knowledge of basic concepts to advance studies-named reactions, reagents, heterocyclic compounds, natural products in living organisms and their roles.
- PSO02:** Students understand the subject deeply and can develop appropriate approach towards the subject.
- PSO03:** Students learn the handling of instruments.
- PSO04:** Students learn different spectral methods of analysis for structure elucidation.
- PSO05:** Students acquire the knowledge of drugs design and retro-synthetic approach.
- PSO06:** Performing reactions, monitoring them independently and characterizing the products which are the foundations of industries.

PSO07: The learners get the basic understandings of research- data generation, collection, conclusions and report writing.

PSO08: The programme makes students able to qualify competitive exams such as GATE, SET, NET-JRP.

PSO09: Students become able to get jobs in industries, laboratories and teaching profession.

PSO10: Students are able to get highly responsible positions in scientific, industrial and academic sectors.

Department of Computer Science

Programme Outcome

- Develop ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.
- To prepare students to undertake careers involving problem solving using computer science and technologies.
- Develop ability to pursue advanced studies and research in computer science.
- To produce entrepreneurs who can innovate and develop software product.
- An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- An ability to identify, formulates, and develops solutions to computational challenges.
- An ability to design, implements, and evaluate a computational system to meet desired needs within realistic constraints.
- An ability to function effectively on teams to accomplish shared computing design, evaluation, or implementation goals.
- An understanding of professional, ethical, legal, security, and social issues and responsibilities for the computing profession.
- An ability to communicate and engage effectively with diverse stakeholders.
- An ability to analyze impacts of computing on individuals, organizations, and society.
- Recognition of the need for and ability to engage in continuing professional development.
- An ability to use appropriate techniques, skills, and tools necessary for computing practice.
- An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.

- An ability to apply design and development principles in the construction of software systems of varying complexity.

Course Outcomes

Computer Fundamental Course code: CSO1

- CO1:** To understand the students familiar with Computer environment.
- CO2:** Familiarize with the basics of Operating System and business communication tools
- CO3:** study the parts of the computer system.
- CO4:** complete explanation about functioning of computer components.
- CO5:** Explain the process of problem-solving using computer
- CO6:** Design an algorithmic solution for a given problem

1.2 Digital Electronics: Course code: CSO2

- CO1:**To understand concepts of digital electronics
- CO2:** solve the number systems and their representation
- CO3:** study basic logic gates, Boolean algebra and K-maps
- CO4:** Study arithmetic circuits, combinational circuits and sequential circuits
- CO5:** Study comparative aspects of logic families.

Operating System (CSO4)

- CO1:** To Explain functions, structures and history of operating systems.
- CO2:** To understand design issues associated with operating systems.
- CO3:** To understand process management concepts including scheduling, synchronization, and deadlocks.
- CO4:** To understand multithreading.
- CO5:** To study master concepts of memory management including virtual memory.
- CO6:** To understand master system resources sharing among the users.
- CO7:** To study issues related to file system interface and implementation, disk management.
- CO8:** To familiarize with protection and security mechanisms.

Programming in C (CS05):

CO1: To make the student learn a programming language.

CO2: To learn problem solving techniques.

CO3: To teach the student to write programs in C and to solve the problems.

CO4: Read, understand and trace the execution of programs written in C language.

CO5: Write the C code for a given algorithm.

CO6: Implement Programs with arrays and functions.

Course code: CS07: Advance C-Programming.

CO1: Explain about to create user defined functions for specific task in c language.

CO2: Explain about functions and its types and working.

CO3: Explain use of user defined data types such as structures & unions.

CO4: Students will capable of dealing with memory using pointers.

CO5: Explain Information about library functions and storage classes in c language.

CO6: Knowledge about preprocessor directives and different operators used in c language.

CO7: Dealing with Files stored on computer memory using File handling.

Course code: CS08 - Data Structure:

CO1: Student will be able to choose appropriate data structure as applied to specified problem definition.

CO2: Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures.

CO3: Students will be able to apply concepts learned in various domains like DBMS, compiler construction etc.

CO4: Students will be able to use linear and non-linear data structures like stacks, queues, linked list etc.

Course Code: CS011 - Programming in CPP:

CO1: To understand basic object oriented concepts & issues involved in effective class design.

CO1:To write C++ programs that use object oriented concepts such as information hiding, constructors, destructors, inheritance etc.

Course Code: CS012 - DBMS Using SQL:

CO1: To know about database system basic concepts, architecture, features, purpose, advantage of DBMS.

CO2: Learning about Component of a DBMS: Users, Facilities & Structure.

CO3: Learning about Data Modeling & Design.

CO4: Learning about Entity-Relationship Data Model.

CO5: Understanding about basics of relational model, normalization, relational algebra.

CO6: Introduction to oracle s/w.

CO7: Student will able to deal with database system using SQL to manipulate data.

CO8: Information about physical storage of data.

CO9: Knowledge about architecture of database system.

CO10: Learning about transaction processing and concurrency control.

CSO15- Software Engineering:

CO1: To manage the selection and initiation of individual projects and of portfolios of projects in the enterprise.

CO2: To conduct project planning activities that accurately forecast project costs, timelines, and quality.

CO3: To implement processes for successful resource, communication, and risk and change management.

CO4: To demonstrate effective project execution and control techniques that result in successful projects.

CO5: To conduct project closure activities and obtain formal project acceptance.

CO6: To demonstrate a strong working knowledge of ethics and professional responsibility.

CO7: To demonstrate effective organizational leadership and change skills for managing projects, project teams, and stakeholders.

CSO16-VB .Net:

CO1: To understand the structure and model of the programming language VB .Net

CO2: To use the programming language VB .Net for various programming technologies.

CO3: To develop software in VB .Net.

CO4: To evaluate user requirements for software functionality required to decide whether the programming language VB .Net can meet user requirements.

CO5: Propose the use of certain technologies by implementing them in the VB .Net programming language to solve the given problem.

CO6: To choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems.

CSO19 -Data Communication and Networking:

CO1: Understand different types of networks, various topologies and application of networks.

CO2: Understand types of addresses, data communication.

CO3: Understand the concept of networking models, protocols, functionality of each layer.

CO4: Learn basic networking hardware and tools.

CO5: Understand wired and wireless networks, its types, functionality of layer.

CSO20- Ethics and Cyber Law:

CO1: To describe laws governing cyberspace and analyze the role of Internet Governance in framing policies for Internet security.

CO2: To discuss different types of cybercrimes and analyze legal frameworks of different countries to deal with these cybercrimes.

CO3: To explain the importance of jurisdictional boundaries and identify the measures to overcome cross jurisdictional cyber-crimes.

CO4: To illustrate the importance of ethics in legal profession and determine the appropriate ethical and legal behavior according to legal frameworks.

CO5: To identify intellectual property right issues in the cyberspace and design strategies to protect your intellectual property.

CO6: To assess the legal issues with online trading, and analyze applicable e-contracting and taxation regulations

CO7: To create security policy to comply with laws governing privacy and develop the policies to ensure secure communication.

Department of Environmental Science

Program Specific Outcomes

PSOs of B. Sc. Environmental Science

PSO1: Introduction to the environment and awareness to environmental pollution.

PSO2: Familiarity with industrial safety and environmental hazards.

PSO3: Study of preventive measures for environmental pollution.

PSO4: Awareness about water, soil and noise pollution.

PSO5: The goal of this education is to disperse the knowledge of environment in younger generation through formal education and produce knowledge.

PSO6: This program will help to students to understand conscious society members for protecting earth's environment and natural processes on the earth

PSO7: The knowledge of environment study will be useful to understand conservation of natural resources with environment needs and survive the life

PSO8: After completing this program students are eligible for various competitive exams in the field of environment conservation under SPCBs, CPCBs, State Forest Departments, MOEFCCs.

Course Outcomes

B.Sc. Environmental Science **Semester I Concepts of Environment- I (EVS-111)**

CO1: Be able to set up a goal in Environmental awareness.

CO2: Understand the basic Environmental components.

CO3: Be able to solve Environmental polluting problems involving topics covered.

CO4: It is helpful to conserve the degraded ecosystem.

Semester I Ecology- II (EVS-112)

CO1: To study basic terms and subject application in life Sciences

CO2: To understand the basic information of types of ecosystems, role of living things in ecosystems, deals with basic ecological concepts.

CO3: To analyze biotic and abiotic factors, animal interactions etc.

Semester II Environmental Chemistry & Natural Resources- IV (EVS-121)

CO1: Be familiar with special function of Environmental chemistry and their applications.

CO2: Have deep understanding of various types of chemical reactions.

CO3: Understand working of greenhouse effects.

CO4: Understand working of various types Biodiversity and importance.

CO5: Be able to solve ozone layer problems involving topics covered.

Semester II Population and Environmental Issues-V (EVS-122)

CO1: Be able to know the characteristics of population and population growth.

CO2: To understand ecological succession and concept of climax.

CO3: To aware about environmental issues and concepts of EIA, SEZ, Sustainable development.

Semester III Solid waste, Soil & Noise Pollution-VII (EVS-231)

CO1: Have introduction to basic concepts of Solid Waste Management.

CO2: Understand various classification of SWM.

CO3: Know various treatment technologies for SW.

CO4: Know various techniques of safe disposal methods.

CO5: Be able to solve hazardous waste problems involving topics covered

Semester III Environmental Microbiology-VIII (EVS-232)

CO1: To understand the significance of air pollution, air sanitation, air as carrier of microorganism and significance of air flora in human health, hospitals and industries.

CO2: To study the determination of sanitary quality of water.

CO3: To understand the importance of indicators of fecal pollution, ways to sanitize potable water.

CO4: To understand sewage treatment and disposal.

Semester IV Air Pollution- XI (EVS-241)

CO1: Be familiar with basic concepts and pollution related problems to time varying fields.

CO2: Be able to write expression for air pollution.

CO3: Able to write physiological and psychological effects of all types of pollution.

CO4: Understand various kinds of health impacts of different pollutions.

CO5: To Understand Air pollution act 1981 and penalties for violators.

Semester IV Water Management-XII (EVS-242)

CO1: Be able to understand global water crisis and its effects.

CO2: To know the water management technics like rain water harvesting.

CO3: To understand water act 1974 and its application.

CO4: To aware community about efficient use of water.

CO5: Case studies and field visits for better understanding.

Semester V Water Pollution - XV (EVS-351)

CO1: Be familiar with basic concepts and water pollution related problems to time varying fields.

CO2: Be able to write expression for water pollution.

CO3: Able to write physiological and psychological effects of all types of water pollution.

CO4: Understand various kinds of health impacts of different water pollutions.

CO5: Understand various kinds of environmental pollution with the help of water pollution study.

Semester V Treatment Technology-XVI (EVS-352)

CO1: To understand waste water and why its treatment is necessary.

CO2: To know various treatment methods associated with.

CO3: To aware people regarding health hazards of waste water prior to treatment.

CO4: Understanding of this paper enables students to work on ETPs, WTPs thus generating employment.

Semester VI Toxicology-XIX (EVS-361)

CO1: To understand classification of toxicants in environment.

CO2: To understand various types of techniques in toxicology.

CO3: To understand toxicity assessment methods.

CO4: To aware community regarding carcinogenic, mutagenic effects of toxicants.

Semester VI Industrial Safety & Hazardous Waste- XX (EVS-362)

CO1: Have introduction with basic concepts of safety.

CO2: Understand the concept of safety management and hazardous waste.

CO3: Understand different types of good and bad housekeeping.

CO4: Have introduction with various applications of safety devices.

CO5: Be able to solve safety regarding problems involving topics covered

Department of mathematics

Program Specific Outcomes

- Understand the foundations of mathematics
- Be able to perform basic computations in higher mathematics
- Be able to read and understand middle-level proofs
- Be able to write and understand basic proofs
- Develop and maintain problem-solving skills
- Use mathematical ideas to model real-world problems
- Be able to communicate mathematical ideas with others
- Have experience using technology to address mathematical ideas

Course outcomes of Department of mathematics

Semester: I

Title of the paper: Differential Calculus.

Class: F.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the fundamentals of Mathematics.

Course level learning outcomes:

CO1 : Explain the relationship between the derivative of a function as a function and the notion of the derivative as the slope of the tangent line to a function at a point.

CO2 : Compare and contrast the ideas of continuity and differentiability.

CO3 : To inculcate to solve algebraic equations and inequalities involving the sequence root and modulus function

CO4 : To able to calculate limits in indeterminate forms by a repeated use of L' Hospital rule.

CO1 :To know the chain rule and use it to find derivatives of composite functions.

CO1 : To find maxima and minima, critical points and inflection points of functions and to determine the concavity of curves.

CO1 : To able to evaluate integrals of rational functions by partial fractions.

Semester: I

Title of the paper: Differential Equation.

Class: F.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the prominent role in engineering, physics, economics, and other disciplines..

Course level learning outcomes:

CO1 : The main aim of the course is to introduce the students to the technique of solving various problems of engineering and science

CO2 : Distinguish between linear, nonlinear, partial and ordinary differential equations.

CO 3 : Solve basic application problems described by second order linear differential equations with constant coefficients.

CO 4 : Find power series solutions about ordinary points and singular points.

CO5 : Find the transforms of derivatives and integrals.

CO6 : Obtain an approximate set of solution function values to a second order boundary value problem using a finite difference equation.

Semester: II

Title of the paper: Integral Calculas.

Class: F.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the applications of integrals Calculas.

Course level learning outcomes:

CO1: Students develop the concepts of limit, function, continuity, discontinuity and derivative.

CO2: Students become familiar with hyperbolic functions, inverse hyperbolic functions, derivatives, and higher order differentiation.

CO3: Students understand the consequences of Rolle's Theorem and mean value theorem for differentiable function.

CO4: Student understands definite integral as the limit of a sum.

CO5: Student will be able to understand the concept of divergence, curl, gradient and it's applications.

Semester: II

Title of the paper : Geometry.

Class: F.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the understand geometrical terminology for angles, triangles, quadrilaterals and circles. measure angles using a protractor.

Course level learning outcomes:

CO1: To understand geometrical terminology for plane, right line, sphere, cylinder and cone.

CO2: To know the geometrical results to find centre and radius of the circle.

CO3: Students find equation of lines and planes in space.

CO4: Student will be able to find angle between two planes and to find length of perpendicular from a given point to a given line.

CO5: Students are able to identify parallel and perpendicular lines.

Semester: III

Title of the paper: Number theory .

Class: S.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives : Obtain approximate stable solution to mathematical problems making use of numerical methods.

Course level learning outcomes:

CO1: Students are able to find quotient and remainders from integer division.

CO2: Students apply Euclid's algorithm and Backward substitutions.

CO3: Students understand the concept of Congruences, residue classes and least residue.

CO4: Student knows the concepts addition and multiplication of integers modulo n .

CO5: Students are able to solve linear congruences

Semester: III

Title of the paper :Integral Transform.

Class: S.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand aim of Integral Transforms and Special Functions is to foster further growth by providing a means for the publication of important research on all aspects of the subjects..

Course level learning outcomes:

CO1: Students understand the concept of beta and gamma function and its application.

CO2: Students are able use to Laplace transform to solve ordinary and partial differential equation.

CO3: Students apply the properties of Laplace Transform to solve examples.

CO4: Students know the difference between linear and nonlinear partial differential equations.

CO5: Student able to solve the linear and nonlinear partial differential equation by various methods like Lagrange's, Charpit's, Jacobi's, Monge's Method.

Semester: III

Title of the Paper : Mechanics-I.

Class: S.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the bridge between theory and application, engineering mechanics is used to formulate new ideas and theories.

Course level learning outcomes:

CO1: Students understand the concepts particle, rigid body, force, equilibrium etc.

CO2: Students can find the components of velocity and acceleration in a given direction.

CO3: Students follow the concepts momentum, angular momentum, work, energy and points functions in mechanics.

CO4: Students know what is projectile and motion of projectile.

CO5: Students know the differential and pedal equations of central orbits and their applications

Semester: IV

Title of the Paper : Numerical Methods.

Class: S.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To improve the student's skills in numerical methods by using the numerical analysis.

Course level learning outcomes:

CO1: Student becomes familiar with numerical solutions of nonlinear equations in a single variable.

CO2: Students know the concepts numerical interpolation and approximation of functions.

CO3: Student solve first order initial value problem using Euler's method.

CO4: Student solve first order initial value problem using a second order Runge- Kutta Method.

CO5: Students are able to find numerical solution of ordinary differential equations.

Semester: IV

Title of the Paper : Partial Differential equation.

Class: S.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the Partial differential equations are used to mathematically formulate, and thus aid the solution of, physical and other problems involving functions of several variables.

Course level learning outcomes:

CO1 : Students know the difference between linear and nonlinear partial differential equations.

CO2 : Student able to solve the linear and nonlinear partial differential equation by various methods like Lagrange's, Charpit's, Jacobi's, Monge's Method.

Semester: IV

Title of the Paper : Mechanics-II.

Class: S.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives:

As a bridge between theory and application, mechanics is used to formulate new ideas and theories, discover and interpret phenomena, and develop experimental and computational tools.

Course level learning outcomes:

CO1: Students understand the concepts particle, rigid body, force, equilibrium etc.

CO2: Students can find the components of velocity and acceleration in a given direction.

CO3: Students follow the concepts momentum, angular momentum, work, energy and points functions in mechanics.

CO4: Students know what is projectile and motion of projectile.

CO5: Students know the differential and pedal equations of central orbits and their applications

Semester: V

Title of the Paper : Real Analysis-I.

Class: T.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives : Real analysis is an area of analysis that studies concepts such as sequences and their limits, continuity, differentiation, integration and sequences of functions.

Course level learning outcomes:

CO1: Students become familiar with terminology sets, elements, operations on sets, functions, operations on functions.

CO2: Students are able to define and recognize the basic properties of the field of real numbers.

CO3: Students are able to understand the concept of series of real numbers, convergence and Divergence.

Semester: V

Title of the paper : Abstract Algebra -I.

Class: T.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: To understand the basic concepts from abstract algebra, especially the notion of a group.

Course level learning outcomes:

CO1: Students understand the number systems and algebraic structures.

CO2: Students understand the concept Ring and special types of Rings.

CO3: Students identify the difference between homomorphism and isomorphism of a group.

Semester: V

Title of the paper : Ordinary Differential Equation-I.

Class: T.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: An ordinary differential equation (ODE) is an equation that involves some ordinary derivatives (as opposed to partial derivatives) of a function. .

Course level learning outcomes:

CO1: Students know the difference between equation and differential equation.

CO2: Students are able to find the solution of linear differential equation of first and second order.

CO3: Students understand the initial value problem and its solutions.

Semester: VI

Title of the paper : Real Analysis-II..

Class: T.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: Real analysis is an area of analysis that studies concepts such as sequences and their limits, continuity, differentiation, integration and sequences of functions.

Course level learning outcomes:

CO1: Students are able to understand the definition of Metric Space and continuous function on metric space and difference between open sets and closed sets.

CO2: Students are able to define Riemann integral and its properties and also Fourier series and its application

Semester: VI
Title of the paper : Abstract Algebra-II.

Class: T.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: Solving problem using the powerful concept of group action.

Course level learning outcomes:

CO1: Students know and apply the concepts of linear dependence and linear independence of vectors.

CO2: Students are able to give the examples of inner product space.

Semester: VI

Title of the Paper: Ordinary Differential Equation-II.

Class: T.Y. B.Sc.

No. of Credits: 5 (Theory)

Objectives: An ordinary differential equation (ODE) is an equation that involves some ordinary derivatives (as opposed to partial derivatives) of a function. Often, our goal is to solve an ODE, i.e., determine what function or functions satisfy the equation.

Course level learning outcomes:

CO1: Students know the concept Wronskian of solution.

CO2: Students can find singular point and regular singular point of the differential equation.

Department of Microbiology

Program Outcomes

Microbiology is a branch of science that studies “life” taking an example of microorganisms such as bacteria, protozoa, algae, fungi, bacteria, viruses, etc. These studies integrate cytology, physiology, ecology, genetics and molecular biology, evolution, taxonomy and systematics with a focus on microorganisms; in particular bacteria. The relevance and applications of these microorganisms to the surrounding environment including human life and mother nature becomes part of this branch. Since inception of this branch of science, microbiology has remained a field of actively research and ever expanding in all possible directions; broadly categorized as pure and applied science. Different branches of pure microbiology based on taxonomy are bacteriology, mycology, protozoology and parasitology, phycology and virology; with considerable overlap between these specific branches over each other and also with other disciplines of life sciences, like biochemistry, botany, zoology, cell biology, biotechnology, nanotechnology, bioinformatics, etc. Areas in the applied microbial sciences can be identified as: medical, pharmaceutical, industrial (fermentation, pollution control), air, water, food and dairy, agriculture (plant pathology and soil microbiology), veterinary, environmental (ecology, geomicrobiology); and the technological aspects of these areas. Knowledge of different aspects of microbiology has become crucial and indispensable to everyone in the society. Study of microbes has become an integral part of education and human progress. Building a foundation and a sound knowledge-base of microbiological principles among the future citizens of the country will lead to an educated, intellectual and scientifically advanced society. Microbiological tools have been extensively used to study different life processes and are cutting edge technologies. There is a continual demand for microbiologists in the work force – education, industry and research. Career opportunities for the graduate students are available in manufacturing industry and research institutes at technical level.

Programme Specific Outcomes (PSOs)

By the end of this course, the students will be able to:

1. Understand the contributions of various scientist in microbiology and scope of various branches.
2. Understand various kinds of prokaryotic & eukaryotic microbes and their interactions.
3. Explain and describe importance of organic compounds and its chemistry found in living cells.
4. Understand and explain various processes of metabolism of carbohydrates amino acids and vitamins.
5. Explain DNA, RNA and protein structure and their synthesis.
6. Understand the concept of disease development, spread, control and eradication from society.
7. Understand the basic concepts of gene and their regulation of action.
8. Explain and write various industrial fermentations and bioinstrumentation.

Course outcomes of Department of Microbiology

Semester: Semester I

Title of the paper: Fundamentals of Microbiology (Paper-I)

Class: F.Y. B.Sc.

No. of Credits: 4 (Theory) + 1 (Practical)

Objectives: To understand the fundamentals of microbiology.

Course content (Syllabus in brief):

1. History of Development and Scope of Microbiology
2. Cell organization
3. Bacteriological techniques
4. Microscopy and Principles of staining
5. Growth and nutrition
6. Macromolecules
7. Enzymes

Course level learning outcomes:

1. Students will gain knowledge about the different cell organelles of microorganisms and their detailed functions.
2. Students will also study the growth and control of microbes as well as different bacteriological techniques involved in microbiology.
3. Students will learn about the biomolecules by studying their structures and types.

Semester: Semester I

Title of the paper Microbiological Techniques and General Microbiology (Paper-II)

Class: F.Y. B.Sc.

No. of Credits: 4 (Theory) + 1 (Practical)

Objectives: To study Stains and dyes And cultivation of microorganisms.

Course content (Syllabus in brief):

Stains and dyes.

- i) Definition : stain, dye, chromogen, chromophore, auxochrome, acidic and basic stains, simple and differential staining. (Gram's and Acid fast staining) , natural stains, mordant, decolourizer, counter stains.
- ii) Physicochemical basis of staining.
- iii) Fixatives and fixation of smears.

Cultivation of microorganisms.

- i) Properties of a good culture medium.
- ii) Definition, concept, use and types of different culture media .
Synthetic, non synthetic, natural, selective, differential, enriched ,
enrichment, assay, minimal, maintenance, and transport media.
- iv) Role of Buffers in culture media.
- v) Media used for cultivation of bacteria , fungi, actinomycetes,
yeasts, algae and photosynthetic bacteria. (at least two)
- iv) Staining of Fungi.

Course level learning outcomes:

1. Students will study about the growth of different types of microorganisms based on various environmental factors.
2. Students will gain knowledge about the nutrient uptake and transport and the different metabolic pathways involved in their growth.
3. Students will also learn about viruses and eukaryotic cell structure in detail.

Semester: Semester II

Title of the paper : Cytology and general Microbiology (Paper-IV)

Class: F.Y. B.Sc.

No. of Credits: 4 (Theory) + 1 (Practical)

Objectives: To study the basics of Bacterial morphology and ultra structure.

Course content (Syllabus in brief):

1.1 Cytology of a typical bacterial cell.

- i) Morphology – size and arrangement of bacterial cells.
- ii) Structure ,chemical compositions and functions of :
 1. Capsule and slime layer
 2. Cell wall : Gram positive and Gram negative bacteria
 3. Unit membrane
 4. Flagella : Arrangement, mechanism of flagellar movement, Chemotaxis, phototaxis, Magnetotaxis.
 5. Pili
 6. Ribosomes.

7. Nuclear material, Mesosome
8. Endospore – types, sporulating bacteria ,architecture of endospore, sporulation process , germination process.
9. Reserved food material: Poly beta hydroxy butyric acid granules, glycogen and polyphosphate granules.

Course level learning outcomes:

1. Students will learn about the ultra structure of bacteria , equipments used and microbiological processes involved.
2. Students will gain knowledge of significance and activities of microorganisms in various field.

Semester: Semester II

Title of the paper: Basic Biochemistry (Paper-V)

Class: F.Y. B.Sc.

No. of Credits: 4 (Theory) + 1 (Practical)

Objectives: To study microbial growth and different biochemical pathways used for the same.

Course content (Syllabus in brief):

1. Nature and Properties of Viruses
2. Microbial Growth and Effect of Environment on Microbial Growth
3. Nutrient uptake and transport
4. Chemoheterotrophic Metabolism – Aerobic respiration
5. Chemoheterotrophic Metabolism - Anaerobic respiration and fermentation
6. Eukaryotic Cell Structure and functions

Course level learning outcomes:

- 1.Students will study about the growth of different types of microorganisms based on various environmental factors.
- 2.Students will gain knowledge about the nutrient uptake and transport and the different metabolic pathways involved in their growth.
- 3.Students will also learn about viruses and eukaryotic cell structure in detail.

Semester: Semester II

Semester: Semester III

Title of the paper: Environmental Microbiology (Paper- VII)

Class: S.Y. B.Sc.

No. of Credits: 6 credits = 4 (Theory) + 2 (Practical)

Objectives:

1. To study presence of pathogens in drinking water .
2. To study the relationship between microorganisms and geochemistry.
3. To understand the role of microorganisms as agents of environmental change.
4. To use microorganisms as indicators of alteration of an ecosystem.
5. To know and understand the role of microbes in the environment and evaluation of anthropogenic activities on pollution, climate change as well as environmental protection.

Course content (Syllabus in brief):

1. Microorganisms and their Habitats.
2. Microbial Interactions.
3. Waste Management.
4. Microbial Bio-remediation.
5. Water Portability.

Course level learning outcomes:

1. Students will gain knowledge and use the properties of microorganisms, principally bacteria, as bioindicators of contamination and to remedy problems of contamination and other environmental impacts.

Semester: Semester III

Title of the paper: Immunology (Paper-VIII)

Class: T.Y. B.Sc.

No. of Credits: 6 credits = 4 (Theory) + 2 (Practical)

Objectives:

1. To study the components of human immune system.
2. To understand human defense mechanisms.

Course content (Syllabus in brief):

1. Introduction of Immunology
2. Immune Cells and Organs
3. Antigens and Antibodies

4. Major Histocompatibility Complex
5. Complement System
6. Generation of Immune Response
7. Immunological Disorders and Tumor Immunity
8. Immunological Techniques

Course level learning outcomes: Students will gain hands on experience of haematology and immunotechniques.

Semester: Semester V

Title of the paper: Applied Microbiology (Paper-XI)

Class: S.Y. B.Sc.

No. of Credits: 4

Objectives: To study the applications of microorganisms and their components.

Course content (Syllabus in brief):

1. Dairy microbiology
2. Food microbiology
3. Food borne disease and intoxication
4. Fermented food and Probiotics
5. To study general principles of food microbiology, food preservation, fermented and microbial foods.
6. To study epidemiology of food-borne microorganisms of public health significance and food spoilage microorganisms.
7. To study microbiological examination of foods, microbiological quality Control and quality schemes.

Course level learning outcomes: Students will be able to apply the knowledge for start-ups in the field of microbiology.

Semester: Semester IV

Title of the paper : Clinical Microbiology (Paper-XII)

Class: S.Y. B.Sc.

No. of Credits: 6 credits = 4 (Theory) + 2 (Practical)

Objectives: Understand relationship between human host and pathogens and the ability of pathogens to cause disease.

Course content (Syllabus in brief):

1. Normal microflora of the human body and host pathogen interaction
2. Sample collection, transport and diagnosis
3. Bacterial diseases
4. Viral diseases
5. Protozoan diseases
6. Fungal diseases

Course level learning outcomes:

1. Students will be able to correlate disease symptoms with causative agent, isolate and identify pathogens.
2. They will gain knowledge of mechanism of action of antimicrobial drugs and prophylaxis.

Semester: Semester V

Title of the paper: Microbial Genetics (Paper-XV)

Class: T.Y. B.Sc.

No. of Credits: 6 credits = 4 (Theory) + 2 (Practical)

Objectives:

1. To understand mechanisms of gene transfer, expression and regulation.
2. To comprehend the types and effects of mutations and recombination.

Course content (Syllabus in brief):

1. Gene expression and regulation
2. Gene transfer mechanisms
3. Transformation
4. Transduction
5. Conjugation
6. Mutations
7. Spontaneous Mutations
8. Types of mutations
9. Induced mutations
10. Molecular recombination and molecular taxonomy

Course level learning outcomes:

Students will gain knowledge of prokaryotic gene transfer mechanisms, mutations and recombination.

Semester: Semester V

Title of the paper: Microbial Metabolism (Paper-XVI)

Class: T.Y. B.Sc.

No. of Credits : 4 (Theory) + 2 (Practical)

Objectives: To understand mechanism of action of enzymes and biochemical pathways.

Course content (Syllabus in brief):

Enzymes : Definition, properties, specificity, active site, activation of enzymes, mechanism of action of enzymes (lock and key , induced fit, ping-pong)

- Nomenclature and classification of enzymes

Definitions: Metabolism, anabolism , catabolism, free energy.

- Bioenergetics: chemical links between catabolism and biosynthesis, energy coupling through ATP and through pyridine nucleotides, Central role of ATP-ADP system.
- Catabolism of saturated (16 carbon) and unsaturated fatty acids (16 carbon) by β oxidation
- Degradation of proteins and amino acids : proteolysis, putrefaction.
- Transformation of aminoacids : oxidation, reduction, decarboxylation, deamination . (one example of each).
- Nucleic acid catabolism: DNA, RNA depolymerization, degradation of nitrogenous bases (mention end products without pathway)
- Biosynthesis of nucleotides: Purine and pyrimidine nucleotides, conversion of ribonucleotides to deoxyribonucleotides. • Carbohydrate synthesis : peptidoglycan.

Semester: Semester VI

Title of the paper: Recombinant Microbiology (Paper-XIX)

Class: T.Y. B.Sc.

No. of Credits: 4 (Theory) + 2 (Practical)

Objectives:

Course content (Syllabus in brief):

Recombinant DNA technology :definition, tools used for cloning, restriction endonucleases types, nomenclature, recognition sequences, with examples).

- Modification of blunt ended DNA (T4 ligase, homopolymer tailing, linkers and adapters)
 - Vectors : properties of good vector, cloning and expression vectors. (pBR322, pUC8, pSC101,) ,Bacteriophage vectors (λ phage,M 13 phage vectors), phagemid, cosmids, YAC /MAC.
 - Genetic engineering – principles, cloning organisms, uptake of DNA (Calcium chloride treatment, electroporation, protoplast fusion, liposome), selection of recombinant clones.
 - Genomic library (construction and identification of desired clone)
- Nucleic acid & protein blotting techniques : Southern blotting, western blotting, northern blotting.
- Colony hybridization

- DNA sequencing (Maxam & Gilbert)
- Probes (preparation & labeling) , its uses
- PCR

Nucleic acid & protein blotting techniques : Southern blotting, western blotting, northern blotting.

- Colony hybridization
- DNA sequencing (Maxam & Gilbert)
- Probes (preparation & labeling) , its uses
- PCR

Semester: Semester VI

Title of the paper: Industrial Microbiology (Paper-XXII)

Class: T.Y. B.Sc.

No. of Credits: 6 credits = 4 (Theory) + 2 (Practical)

Objectives:

1. To understand importance of industrially significant microorganisms and their metabolites.
2. To understand fermentation processes and product recovery.

Course content (Syllabus in brief):

1. Isolation of industrially important microbial strains and fermentation media.
2. Types of fermentation processes, bio-reactors and measurement of fermentation parameters
3. Down-stream processing
4. Microbial production of industrial products (micro-organisms involved, media, fermentation conditions, downstream processing and uses)

Course level learning outcomes:

1. Students will be able to understand the industrial production of important microbial metabolites and products.
2. Students will gain knowledge of isolation, maintenance and handling of industrially important microbial cultures in laboratory settings.

Department of Physics

Programme Specific Outcomes

PSOs of B.Sc. Physics

PSO01: Demonstrate knowledge of selected topics from mechanics, Heat, Thermodynamics, optics etc. and apply this knowledge to analyze a broad range of physical phenomenon .

PSO02: Learn the concept of Quantum mechanics, relativity introduced at degree level in order to understand nature at atomic level .

PSO03: Demonstrate proficiency in mathematical and mathematical concepts needed for a proper understanding of physics .

PSO04: Learn the structure of solid material and their different physical properties.

PSO05: Learn Laboratory skills, helping them to take measurement in a physics laboratory And analyze the measurement to draw valid conclusions.

PSO06: Demonstrate written and oral communication skills in communicating Physics related topics.

Course Outcomes

F. Y. B. Sc. Physics

101-Paper No I: Mechanics, properties of matter & sound (Sem-I):

CO1: To familiarize students with basic concepts of Mechanics.

CO2: To have deep understanding of Newton's laws of gravitation and their applications.

CO3: To understand the concepts of viscosity and elasticity thoroughly.

CO4: To understand the phenomena of surface tension and its applications.

CO5: To understand the concept of ultrasonic and acoustics effectively.

CO6: To enable students to solve numerical problems involving topics covered.

Paper No II: Heat and Thermodynamics (Sem-I):

CO1: To understand the concept of thermal conductivity and its application.

CO2: To understand the concept of real gases and transform phenomena.

CO3: To enable students to understand the laws of thermodynamics and thermodynamic processes.

CO4: To study the concept of entropy thoroughly.

CO5: To study heat engines and their efficiency.

CO6: To enable students to solve numerical problems involving topics covered.

104- Paper No IV: Geometrical and Physical Optics (Sem-II)

CO1: To familiarize students with basic concepts of optics.

CO2: To have deep understanding of cardinal points of optical system.

CO3: To understand the concept of interference thoroughly.

CO4: To enable students to summarize the phenomena of diffraction and polarization.

CO5: To enable to solve numerical problems involving topics covered.

Paper No V: Electricity and Magnetism (Sem-II)

CO1: To understand the basic concepts and laws in electrostatics.

CO2: To study the basic concepts and laws in dielectrics.

CO3: To get knowledge of the basic concepts and laws of magnetism.

CO4: To understand the basic concepts of Transient current.

CO5: To enable students to solve numerical problems involving topics covered

S. Y. B. Sc. Physics

201-Paper No VII: Mathematical, Statistical Physics and Relativity (Sem-III)

CO1: To familiarize students with the mathematical methods used in physics.

CO2: To familiarize students with the vector algebra.

CO3: To get acquaintance with the differential equations.

CO4: To familiarize students with partial differential equations.

CO5: To familiarize students with Classical and quantum Statistics.

CO6: To understand the concepts of special theory of relativity.

CO7: To apply these mathematical methods to solve problems in physics.

202- Paper No VIII: Modern and Nuclear Physics (Sem-III)

CO1: To familiarize students with basic properties of nucleus.

CO2: To have deep understanding of radioactivity and its applications.

CO3: To familiarize students with nuclear forces and elementary particles.

CO4: To understand construction and working of various particle accelerators and detectors.

CO5: To understand construction and working of photoelectric effect.

CO6: To study different photoelectric cells.

CO7: To enable students to solve numerical problems involving topics covered.

205- Paper No XI: General Electronics (Sem-IV)

CO1: To familiarize students with the basic electronic components.

CO2: To understand the concept of semiconductors.

CO3: To have deep knowledge about semiconductor devices.

CO4: To familiarize with the transistor circuits and their characteristics.

CO5: To understand oscillators and multivibrators.

CO6: To understand the process of modulation and demodulation.

CO7: To solve numerical problems involving topics covered.

206- Paper No XII: Solid state Physics (Sem-IV)

CO1: To familiarize students with basic concepts of structure of solids.

CO2: To familiarize with various types of characterization techniques.

CO3: To understand the concept of bonding and band theory of solids deeply.

CO4: To understand the transport properties thoroughly.

CO5: To enable students to solve numerical problems involving topics covered.

T. Y. B. Sc. Physics

54 301- Paper No XV: Classical and Quantum Mechanics (Sem-V)

CO1: To understand the mechanics of the system of particles.

CO2: To understand d'Albert, principle, Langranges Equation and its application.

CO3: To familiarize students with the historical background of Quantum Mechanics.

CO4: To understand the wave function and its physical interpretation clearly.

CO5: To familiarize with the time dependent and time independent Schrodinger equations and their applications.

CO6: To familiarize students with various operators used in Quantum Mechanics.

CO7: To enable students to solve numerical problems involving topics covered

Paper No XVI: Electrodynamics (Sem-V)

CO1: To familiarize students with various differential operators to study the Gauss law.

CO2: To familiarize with basic concepts and equations related to time varying fields such as Faradays law, Len's law etc.

CO3: To write expression for poynting vectors for electromagnetic waves.

CO4: To enable to to write wave equations.

CO5: To solve numerical problems involving topics covered.

305- Paper No XIX: Atomic, Molecular Physics and LASER (Sem-VI)

CO1: To familiarize students with conceptual development of atomic model.

CO2: To understand one or two valence electron systems deeply.

CO3: To understand Zeeman effect, paschan back effect, Stark effect.

CO4: To understand Molecular Raman Spectroscopy.

CO5: To have deep introduction to lasers.

CO6: To familiarize students with different types of laser.

CO7: To understand construction and working of various types of lasers.

CO8: To be aware with various applications of lasers.

CO9: To enable students to solve numerical problems involving topics covered.

Paper No XX: Non-conventional Energy sources and Optical Fibers (Sem-VI)

CO1: To introduce students with various types of renewable energy sources.

CO2: To familiarize students with various applications of solar energy.

CO3: To familiarize students with various applications of biomass energy.

CO4: To familiarize students with the wind mechanics.

CO5: To create awareness among students about energy conservation.

CO6: To familiarize students with optical fibers.

CO7: To familiarize students with various applications of optical fibers.

CO8: To enable students to solve numerical problems involving topics covered.

Department of Zoology

Program Outcome

- ❖ This program is one of the most basic pillar of science and technology studied at undergraduate level. After studying this program, students will be more ready to learn and know about different biological systems and taxonomy, their coordination and control as well as evolution, behavior of various animals and biological roles of the animals in the ecosystem.
- ❖ they will provide a platform for classical genetics in order to understand inheritance of different traits and diseases, genetically disorders among populations, their background and correlate with contemporary and modern techniques like genomics, metagenomics, genome editing, and molecular diagnostic tools.
- ❖ After the completion of this course, students have the option to go for higher studies, i.e., IIT, JAM, M. Sc. / Integrated MS Ph.D. and then do research work for the welfare as a researcher. After higher studies, students can work as scientist or assistant professor or assistant teacher and can even go for professional job oriented courses, such as Indian Civil Services, Indian Forest Service, Indian Police Service (MPSC, UPSC) etc. and also great opportunity in integrated farming.
- ❖ Science graduates can go to serve in industries or may opt for establishing their own industrial unit. Practical and theoretical skills gained in this program will be helpful in designing different public health strategies for social welfare and become an entrepreneur in diverse fields.

After the completion of the B.Sc. degree there are various other options available for the science students.

Program specific Outcome

- ❖ Students enrolled in B.Sc. (Hons.) For degree program in Zoology will study and acquire complete knowledge of disciplinary as well as related biological sciences which will provide them competitive advantage in pursuing higher studies from India as well as in foreign countries.
- ❖ They are able to correctly use biological instrumentation and proper laboratory techniques. Students will be able to communicate biological knowledge in oral and written form.
- ❖ Students should be able to identify, classify and differentiate diverse chordates and non-chordates based on their morphological, anatomical and systemic organization they will also be able to describe economic, ecological and medical significance of various animals in human life.
- ❖ This will create a curiosity and awareness among them to explore the animal diversity and take up wild life photography or wild life exploration as a career option.
- ❖ The procedural knowledge about identifying and classifying animals will provide students professional advantages in teaching, research and taxonomist jobs in various government organizations; including **Zoological Survey of India** and National Parks/Sanctuaries.
- ❖ Students will be able to apply the scientific method to questions in biology by formulating testable hypotheses, gathering data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports their hypotheses.
- ❖ Acquired practical skills in biotechnology and molecular biology can be used to pursue career as a scientist in drug development industry in India or in a foreign countries.
- ❖ 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.
- ❖ Students will be able to explain how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system.
- ❖ Students will be able to explicate the ecological interconnection of life on earth by tracing energy and nutrient flows through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.

Course Outcome

B. Sc. Zoology

Protozoa to Annelida

CO1: To create awareness about fundamental phylums in nature and their classification as phylum system anatomy and development.

CO2: Students will have learning about the basic taxonomy and systematic and classification of

Protozoa, Porifera, Cnidaria, Helminthes and Annelida groups.

They also will acquire knowledge about the anatomy of these taxonomic categories.

CO3: To train the students with all life science fundamental practical skills.

CO4: To aware students with handling all laboratory equipments.

Cell biology

CO1: To understand the structures, composition and role of plasma membrane and all cellular organelles in details.

CO2: They will acquire knowledge about chromosomes and cell divisions, both mitosis and meiosis. They will also know about cell signaling and cancers.

They will know how to measure and stain different cell types

CO3: To understand use of microscopes in cell biology to observe different animal cells.

CO4: Study micro techniques (Microtomy) for fixation and staining of cells .

Arthropoda to Echinodermata and Protochordata

CO1: To introduce the students to higher invertebrates, morphological features, evolutionary development and connecting links and adaptations.

CO2: To analyze the peculiar characteristics of animal groups in relation with its internal characteristics.

Genetics-I

CO1: To understand important terminology of Genetics, Laws, & its applications and contribution of Mendel in genetics.

CO2: To understand different gene interaction and their modification in genotypic ratio and phenotypic ratio.

CO3: To understand Nucleus as well as cytoplasmic inheritance and their effects on genotype phenotype.

CO4: To understand various types of sex determination in different animals.

CO5: To understand role of mutation and chromosomal aberration in various genetic disorders.

Vertebrate Zoology

CO1: To familiarize with basic terminology, Animal systematic and its different Classification, Anatomy and development.

CO2: To understand classification, morphological structures, identification of specimens and anatomy of some animals, embryological process of development.

CO3: To aware students with knowing survey and excursion skills about local vertebrates.

CO4: To aware the students with identification keys of vertebrates.

Genetics-II

CO1: To understand concept of gene and its expression, more emphasis on transcription and translation. Provide information how DNA fragment (gene) work through agents i.e. Protein/RNA.

CO2: To understand role of population genetics in Microevolution, more emphasis on Hardy Weinberg law and its application.

CO3: To understand human genetics and microbial genetics, more emphasis on inborn errors in

metabolism, genetic disorders and gene therapy.

CO4: To understand basic role of genetic engineering and recombinant DNA technology.

Animal physiology

CO1: To study various organism systems and their roles special emphasis on animals.

CO2: To understand life processes of animals through experiments.

CO3: To aware students about day to day life processes with concern diet and habits.

Biochemistry and Endocrinology

CO1: To understand the basic and fundamental biochemistry of biomolecules such as carbohydrates, proteins, lipids and nucleic acids. They will also understand the nature, mechanism, and kinetics of enzyme action.

CO2: To understand some instrumentation such as chromatography, pHmeter, electrophoresis, centrifugation, spectrophotometry etc will also be learnt.

CO3: To focus on endocrine system of vertebrates and more emphasis on various gland morphology, histological structure, hormones and their function.

CO4: To aware with issues of diabetes and concern fluctuation in sugar levels..

Ecology

CO1: To study basic terms and subject application in life Sciences

CO2: To understand the basic information of types of ecosystems, role of living things in ecosystems, deals with basic ecological concepts.

CO3: To analyze biotic and abiotic factors, animal interactions etc.

CO4: Students can participate in field collection and their identification to understand insect ecology

Biotechnology –I

CO1: To aware students about biotechnology.

CO2: To aware students basic skills and methods in biotechnology.

CO3: To understand various applied fields biotechnology.

CO4: To aware students with knowledge of different techniques such as Column Chromatography, Laminar Flow and Spectrophotometer etc.

Evolution

CO1: To study basic terms and subject application in life Sciences.

CO2: To participate in laboratory experiments for understanding the basic principles of evolution through models and helpful for gaining primary information.

CO3: To study origin, evolution, and genetic diversity.

CO4: To demonstrate an understanding of structure/function relationships in organisms

Biotechnology-II

CO1: The student will demonstrate an understanding of practical techniques used in biotechnology, including basic background information and theory, applications, limitations, advantages and disadvantages, common problems and troubleshooting.

CO2: The student will aware demonstrate an understanding of the principles behind searching, finding and evaluating pertinent scientific information.

CO3: The student will demonstrate an understanding of the principles behind searching, finding and evaluating pertinent scientific information.

CO4: The student will demonstrate an awareness of current events in biotechnology and their financial, social and ethical implications.

Departmental of physical Education

Programme Outcomes

PO01: Individual and team work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO02: Communication: Communicate effectively on physical education, sports, games, sports event management related activities at varied complexity level sports community and with the society at large, such as, being able to comprehend and write effective reports and design documentation make effective presentations and give and receive clear instructions.

PO03: Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadcast context of sports and games technological change.

PO04: To develop individuals for attaining specific goals.

PO05: Summarize and analyze current issues in healthiness and wellness.

Program Specific Outcomes (PSOs)

PSO01: Students will acquire a comprehensive knowledge and sound understanding of fundamentals of physical education.

PSO02: Students will develop practical, theoretical skills in physical education.

PSO03: Students will be prepared to acquire a range of general skills, to specific skill to communicate with society effectively and learn independently.

PSO04: Students will acquire a job efficiently in diverse fields such as B.PED, M.PED, SSC, NET, SET.

PSO05: Physical, Mental (Participating in various sports and games) Social wellbeing (Individual and Community Development)

Course Outcomes

COs: Physical Education

B.A.F.Y Sem I. Phy. Edu-101 Paper-I

Philosophical, Sociological Foundations and History of Physical Education

CO1: Philosophical Foundations, understand and appreciate the relationship of physical education to the total educational process.

CO2: Sociological Foundations, sociological basis physical education, socialization and sports.

CO3: Physical education in India during 20th century, aims and objects of physical education

CO4: Nature of physical education system, ancient and medieval India.

CO5: Historical development of ancient Olympic games and modern Olympic games.

B.A.F.Y Sem-II Phy. Edu. -102 paper-II

Principles and Recent Development in Physical Education

CO1: Principles of physical education, biological principles of physical education.

CO2: Sociological principles of physical education, social values, social welfare, sociological agencies.

CO3: Classification of children, physiological, sociological, biological characteristics of children, psychological bases of classification.

CO4: Recent development of physical education.

CO5: sports and game organization in India.

CO6: Roll of association and sports bodies.

Practical Physical Education 103 (Sem- I+II) Paper-III

Track and field.

CO1: To be able to learn and deliver knowledge of basic fundamental skills, techniques, stance, ground marking and dimensions, rules in the games and duties of officials of the event of hurdles and relays.

CO2: To develop a knowledge about the historical development of the game.

Kabbadi: To be able to learnt deliver the knowledge of basis fundamental skills, techniques, stances, forms, rules and duties of officials etc. in the event of Kabbadi.

B.A.S.Y. Sem III. Phy. Edu 201. Paper IV

Health Education and Recreation in Physical Education and Sports

CO1: Understand the concept, aim, objectives and importance of health education.

CO2: Develop right concept about health and factors influencing health.

CO3: Identify role and responsibilities in the physical , mental, social health programme.

CO4: Contemporary health problems, family and health education.

CO5: Explain recreation in Physical Education and sports, planning a program of recreation, agencies promoting recreation.

Sem- IV Phy. Edu 202 Paper V

Officiating, coaching and training methods in physical education and sports.

CO1: To understand basic concepts and principles of officially coaching and training methods.

CO2: To train physical education teacher for conducting games\sports tournaments in well organized manner and impart knowledge of coaching and officiating of different games\sports.

CO3: To enable the students to understand the rules, resolutions and of different sports.

CO4: To acquaint the students with the duties and responsibilities of officials and coaches.

CO5: To acquaint with the roles and responsibilities of coaches and officials.

Practical Physical Education 203 (Sem- III+IV) Paper-VI

Track and field.

CO1: To be able to learn and deliver knowledge of basic fundamental skills, techniques, stance, ground marking and dimensions, rules in the games and duties of officials of the event of hurdles and relays.

CO2: To develop a knowledge about the historical development of the game.

Volleyball: To be able to learnt deliver the knowledge of basis fundamental skills, techniques, stances, forms, rules and duties of officials etc. in the event of Volleyball.

B.A.T.Y. Sem-V (Subsidiary) Phy. Edu. 301 Paper-VII

Ancient and Modern History of Physical Education and Sport

CO1: Introduction of physical education in ancient India.

CO2: Physical education in India after Independence.

CO3: Physical education in the state of Sparta and Athens.

CO4: Government bodies and policies in physical education.

CO5: Scheme and awards related to physical education and sports.

CO6: Institutions of physical education in India.

B.A.T.Y. Sem-V (Main) Phy.Edu. 302 Paper-VIII

Sports Psychology and Management in Physical Education

CO1: Psychology in physical education and sports, importance of psychology in sports.

CO2: Growth and development, physical, emotional and social development.

CO3: Motivation, psychological factor influencing motivation.

CO4: Management in physical education and sports, functions of management, philosophy of management.

CO5: Teaching methods in physical education.

CO6: Facilities and equipments.

B.A.T.Y. Sem-VI (Subsidiary) Phy. Edu. 303 Paper-IX

Organization, Administration and supervision in Physical Education Youth Welfare and Youth Services.

CO1: Organization, administration and supervision.

CO2: Organizing and conducting tournaments.

CO3: Intramurals program and extramural program.

CO4: Supervision in physical education.

CO5: Youth welfare and youth services.

B.A.T.Y. Sem-VI (Main) Phy. Edu. 304 Paper-X

Anatomy, Physiology and Kinesiology of Physical Education

CO1: Introduction to anatomy.

CO2: Skeleton system.

CO3: Introduction to physiology.

CO4: Muscular system.

CO5: Respiratory system.

CO6: Introduction to kinesiology

Practical Physical Education 305 (Sem- V+VI Subsidiary) Paper-XI

Track and field.

CO1: To be able to learn and deliver knowledge of basic fundamental skills, techniques, stance, ground marking and dimensions, rules in the games and duties of officials of the event of hurdles and relays.

CO2: To develop a knowledge about the historical development of the game.

Kho-Kho: To be able to learnt deliver the knowledge of basis fundamental skills, techniques, stances, forms, rules and duties of officials etc. in the event of Kho-Kho.

Practical Physical Education 306 (Sem- V+VI Main) Paper-XII

Track and field.

CO1: To be able to learn and deliver knowledge of basic fundamental skills, techniques, stance, ground marking and dimensions, rules in the games and duties of officials of the event of hurdles and relays.

CO2: To develop a knowledge about the historical development of the game.

Yogasana, Pranayama and Suryanamaskar: To be able to learnt deliver the knowledge of basis fundamental skills, techniques, stances, forms, rules and duties of officials etc. in the event of Yogasana, Pranayama and Suryanamaskar .

CO1: Padmasanas, Tadasanas, Chakrasanas, Hallasanas, Vajrasanas and Shavasanas.

CO2: Anulom Vilom, Kapalbhathi, Bhramari and Bhastrika.als etc. in the event of volleyball.

Program Specification Outcome Psychology

Co1. Students understand and appreciate the role of interdisciplinary sciences in the development and wellbeing of individuals, families and communities.

Co2. Students understand the science and technology that enriches the quality of life of people.

Co3. Students acquire professional skills for empowerment of self-knowledge in particular and in community in general.

Co4. Students will develop professional skills in human behavior and counselling for human development.

Course Outcome Specification Psychology

B.A. Ist Year

General Psychology

COS 1. Acquire solid foundation for the basic principles of Psychology.

COS 2. Familiarize students with historical trends in Psychology, major concepts theoretical perspectives empirical findings.

COS 3. Understand definition of Psychology, types of Psychology professionals.

COS 4. Learn behavioral perspective.

COS 5. Know steps of scientific methods and observations.

Social Psychology

COS 1. Learn about Social Psychology.

COS 2. Know the level of explanation.

COS 3. Understand the social problem that can be analyzed in terms of various social Psychological theories.

Basic Concepts in Psychology

COS 1. Understand the meaning, importance and need of Psychology and behavioral education.

COS 2. Understand and create interest in Psychological phenomenon.

COS 3. Develop the skill of observation.

Basic Concept in Social Psychology

COS 1. Learn basic concepts of Psychology and Social Psychology.

COS 2. Enable students to appreciate how individual behaviour is influenced by social and cultural contexts

COS 3. Understand the unique features of the Indian Socio-cultural context.

B.A. IInd year

Psychology of Adjustment

COS 1. Enable students to relate what they are learning in class, the issue that they encounter in their everyday life such as stress, health, work, personal relationships, communication and self-esteem.

COS 2. Friendship and love Psychology.

COS 3. Face life challenges.

Psychological Testing

COS 1. Understanding Psychological assessment techniques.

COS 2. Acquaint the students and make them understand the different statistical methods with its uses and interpretations.

COS 3. Understand skills necessary for selecting and applying different tests for different purpose evaluation and training.

Psychology for Living

COS 1. Understanding self.

COS 2. Understanding Basic principles of self-perception.

COS 3. Understanding Stress and its effects.

COS 4. Understanding coping process.

COS 5. Understanding Psychology and Physical health

.

Psychological Statistics

COS 1. Acquaint the students and make them understand the different statistical methods with their uses and interpretations.

COS 2. Train students in various Psychological assessment techniques.

COS 3. Measures of central tendency.

COS 4. Impart skills necessary for selecting and applying different tests for different purpose such as evaluation, training rehabilitation, etc.

B.A. IIIrd Year

Abnormal Psychology

COS 1. Understand the Abnormal behaviour in today's times.

COS 2. Understanding what is anxiety and its disorders.

COS 3. Understanding Psychological therapies and treatment.

Organizational Psychology

COS 1. Understanding behaviour of individuals along with other organizational assets.

COS 2. Learn theoretical aspects of the course.

Introduction to Counselling

COS 1. Study the counselling Psychology.

COS 2. Understanding Importance of counselling.

COS 3. Learning Goals of counselling.

COS 4. Understanding the Scope of counselling.

Psychopathology

COS 1. Impart knowledge about the normality and abnormality.

COS 2. Make students understand the nature and course of various abnormal conditions.

COS 3. Impart knowledge and skill needed for psychological assessment of different abnormal conditions.

Organizational behavior

COS 1. Understanding individual in the organization.

COS 2. Understanding group and organization.

COS 3. Understand and Communicate in an organization.

COS 4. Understanding Leadership in organization.

Counseling in Action

COS 1. Understand Theories of Counseling.

COS 2. Understand Importance of career counselling.

COS 3. Understand concept of Married couple and family counselling.

Department of Home Science

Course

Outcome (POs)

POs-Home science

- PSO01:** To create awareness of scientific use of resources (BL4).
- PSO02:** To develop skill in creating design & making art object like painting, printing article, home décor etc (BL6).
- PSO03:** To develop abilities to apply the knowledge for self-employment as well as entrepreneurship in production, sales, research, teaching, counselor [diet, marriage, family etc.] & many career in government private hospitals, industries, National, International food organization like NIN, ICMR, WHO (BL6).
- PSO04:** Students can work at any field that they interesting in it (BL6).
- PSO05:** To build up problem solving skills in students (BL5).
- PSO06:** It is an integral part of human life & informal was we are associated with all subjects (BL6).
- PSO07:** After completing UG Home-science they are able to secure profitable employment in different sector (BL6).

Course

Outcome (POs) POs-Home science

- PSO01:**To create awareness of scientific use of resources.
- PSO02:**To develop skill in creating design & making art object like painting, printing article, home décor etc .
- PSO03:**To develop abilities to apply the knowledge for self-employment as well as entrepreneurship in production, sales, research, teaching, counsellor [diet, marriage, family etc.] & many career in government private hospitals, industries, National, International food organization like NIN, ICMR, WHO
- PSO04:**Students can work at any field that they interesting in it .

PSO05: To build up problem solving skills in students.

PSO06: It is an integral part of human life & informal way we are associated with all subjects.

PSO07: After completing UG Home-science they are able to secure profitable employment in different sector.

Course

Outcome (Cos)

COs-Home Science

- **B. A. Home Science B.A. F.Y. Paper-1: Family Resource Management**
- **CO1:** To understand the family resources.
- **CO2:** To acquire knowledge about the management process.
- **CO3:** To develop the ability to improve the work within less time, less resources & Fatigue.
- **CO4:** To understand about types of saving, investments, to make an income wise house budget.
- **CO5:** To improve knowledge through consumer education.
- **B.A. F.Y. Paper- 2 Food & Nutrition:**
- To acquire knowledge in the following Fields
- **CO1:** Role of food and functions of nutrient.
- **CO2:** Different sources and deficiencies of nutrients
- **CO3:** Students can improve the nutritional quality of food & nutrition.
- **CO4:** Develop practical skill & abilities.
- **CO5:** To aware about own health & their family
- **B.A. F. Y. Paper – 3 HUMAN DEVELOPMENT [Prenatal & Early Childhood]**
- **CO1:** To understand reproductive system of men & women.
- **CO2:** To understand the importance of prenatal development.
- **CO3:** To know the adjustmental problems of infancy & all over development of child.
- **CO4:** To provide an overview of behavioral problems of early childhood & child rearing practice and effect on personality development.
- **B.A. F.Y. Paper- 4 [Textile & Clothing]**
- **CO1:** To improve ability for proper choice of fabrics.
- **CO2:** To impart knowledge regarding textile & clothing.
- **CO3:** To develop creative & technical skills in clothing construction.
- **CO4:** To enable students to develop skills in embroidery.
- **CO5:** To encourage entrepreneurship.
- **B.A. S.Y. Paper-5 [Extension Education]**
- **CO1:** To understand the importance & need of Home science extension education.
- **CO2:** To understand the process of communication in development work.

- **CO3:** To get acquainted with the terms in extension approaches & models.
- **CO4:** To know about the extension work & services doing under home science extension.
- **B.A. S.Y. Paper-6 [Textile & Clothing]**
- **CO1:** To impart knowledge about the basic principles of design & painting.
- **CO2:** To develop knowledge & skill about wardrobe planning, selection of clothes for different age group, texture & fabric.
- **CO3:** To know about important aspects of clothing.
- **B.A. S.Y. Paper-7 Child Development-[Late childhood & Adolescent]**
- **CO1:** To appreciate the sequential stages of development during the childhood.
- **CO2:** To understand the behavioral problems during late childhood. **CO3:** To aware the need & skill to be developed for self improvement. **CO4:** To know the development & behavior during adolescence.
- **B.A. S. Y. Paper-8 Food& Nutrition**
- **CO1:** To understand the concept of an adequate diet & importance of meal planning.
- **CO2:** To gain acquaintance with human gastro intestinal tract.
- **CO3:** To know the different methods of food preservation.
- **CO4:** To gain the knowledge about the nutrient needs for various age groups.
- **CO5:** To be aware of the effect of food poisoning & food adulteration.
- **B.A.T.Y. Paper -9 Marriage & Family Dynamics**
- **CO1:** To understand the merits & demerits of marriage & family.
- **CO2:** To be aware about the areas of adjustments in marriage & family.
- **CO3:** To share knowledge about the laws related to women, marriage and family.
- **CO4:** To develop awareness about counseling.
- **B.A.T.Y. Paper -10 Housing & Interior Decoration.**
- **CO1:** To recognize the role of housing the integrated development.
- **CO2:** To know essentials of interior decoration.
- **CO3:** To study the landscape designing & its application.
- **B.A.T.Y. Paper-11 Nutritional Management in Health & Diseases** **CO1:** To know the principles of diet therapy.
- **CO2:** To understand the role of dietician.
- **CO3:** To understand the modification of normal diet for therapeutic purpose.
- **B.A.T.Y. Paper-13 Human development [Adulthood & Oldage]** **CO1:** To know different aspect in adulthood.
- **CO2:** To gain knowledge regarding adjustment during adulthood.
- **CO3:** To understand the nature of developmental pattern in adulthood & oldage.
- **B.A.T.Y. Paper 14 Fundamental of Art & Design.**
- **CO1:** To understand elements of principles of art & design.
- **CO2:** To apply various colours, harmonies in design.
- **CO3:** To develop skill in creating design & making art object.
- **B.A.T.Y. Paper- 15 Communication process in Home-science** **CO1:** To understand the roll of communication in development. **CO2:** To learn the process of communication effects of media.

- **CO3:** To develop the skill in students about the use of communication methods & media.
- **CO4:** To enable qualities of leadership in the students.
- **CO5:** To know the importance of programme, planning, implementation, evaluation of programme

Department of History

Programme Specific Outcomes (PSOs)

- PO1** - Courses useful for the development of a generous humanitarian personality and for the benefit of society.
- PO2** - The task is to awaken the conscience of human beings and to create the dynamism of conduct in human beings.
- PO3** - Excellent leadership can change the course of development of the state, country and society and inspire students by influencing the history of aspiring individuals.
- PO4** - The course teaches students a strong sense of nationalism about their country and the need to fight against injustice.
- PO5** - Knowing how advanced our ancient culture and traditions, literature, religious philosophy and political goals are, and it makes us proud of India and its ancient history.
- PO6** - It is clear from this history that weak countries or people are always in the throes of injustice and have to fall prey to social, political and cultural slavery.
- PO7** - The coming together of religion and the state is detrimental, and one learns that the cohesive role of religion is in the interest of society.
- PO8** – To learn students of our Prosperous Culture, Polity and Cultural Ethics and development of ancient archeological Facts.
- PO9**- This course contents learn to students writing methodologies of History and Scientific Method of History Writing.
- PO10**- Nationalism and Freedom Struggle Movement inspired to Patriotism.
- PO11**- Students aware of British policies and its impact on India.
- PO12**- Project work paper aware to students about Research, Research Methodology and research ethics.
- PO13**- History is allied and deeply rooted various fields of Professions. Course will orient the students leading and using our knowledge with historical facts.
- PO14**- Awake students about Renaissance and battles against injustice. Introducing development of Human Rights and bad effects of war.
- PO15**- Aware students about ancient Marathwada and his great history.

Programme Outcomes (PSOs):

PAPER NO. 01: - SHIVAJI AND HIS TIMES (A.D. 1630 – A.D. 1707)

- CO1- This content convinces students of the importance of geography in history.
- CO2- Shivaji Maharaj's contribution to the concept of Swarajya and the establishment of Swarajya is a guide to the students.
- CO3- Students will be introduced to the technique of Shivaji Maharaj's guerrilla war technics and its use.
- CO4- Shivaji Mahararaj inspired to Indian youth for his humanitarian values.
- CO5- Unity, Confidence and Patriotism learn to Students.
- CO6- This Content learns to student's better management of Administration.

PAPER NO. 02:- History of Modern Maharashtra (A.D. 1818 – A.D. 1905)

- CO1- Students need to be aware of the British arrival and trade, colonial and imperialist policies to understand the true nature of British power.
- CO2- To give proper information about the social, political and cultural life of Maharashtra.
- CO3- Introducing the progressive thinking of social reformers and creating a humanist generation.
- CO4- This element teaches how to deal with injustice. It also teaches what the consequences are.
- CO5- t creates an awareness of the importance of organizations and their affiliations in the Indian national movement.

PAPER NO. 03 :- HISTORY OF THE MARATHA'S (A.D. 1707 – A.D. 1818)

- CO1- This Content learns to what qualities should in good leaders. And what is good tactic of best administration.
- CO2- This content learn Courage and Mind is Necessary in war and silence.
- CO3- In every battle diplomacy is important .If diplomacy would wrong battle defeated.
- CO4- students teach from this part State Stability is way of Success Polity.
- CO5- Good relation with near state is necessary and it is Part of diplomacy.
- CO6- Nothing happened without cause. Behind everything have many of Causes.
- CO7-From this it is learned that the purpose of creating a welfare state is necessary to sustain the state.

PAPER NO. IV: - TWENTIETH CENTURY MAHARASHTRA (A.D. 1905 – A.D. 1960)

CO1- It teaches us that freedom cannot be achieved without sacrifice, and effort. Nationalism is one of mental concept which helps to freedom.

CO2- Gandhi's movement teaches students non-violence, truth and love. In the same way, it is important to understand your role without hesitation.

CO3- The social movement creates awareness about the problems of the society at that time and how we can solve the problems that are there now.

CO4- Hyderabad Mukhtsangram teaches everyone the motivation to fight against injustice.

CO5- The creation of the state of Maharashtra tells you that innovation is a process and its creation is not easy.

PAPER NO. 5 - HISTORY OF EARLY INDIA (UPTO B.C. 300)

CO1- students learn from this content fact is necessary for History writing

CO2- Harappan culture has given you a history where Indians should be proud and proud in the world.

CO3- Literature and various aspects of human life are known to you from the Vedic society. For. Ex. Freedom of Women.

CO4- Great Indian religious Philosophy to students about moral and Human Values.

CO5- Knowing about Moryan Empire and his Glorious History.

CO6- understands Social Status, Agriculture and Commerce and Economic development of Indian History.

PAPER NO. 6 - HISTORY OF DELHI SULTANAT (A.D. 1200 - A.D. 1526)

CO1- History Sources help to students to History writings and it is base of History.

CO2- Students learn about Muslim invasion on India and its impacts on India.

CO3- Understand Nature of Administration and policies of Delhi sultanate.

CO4- Students get knowledge about Society, Peasantry and Social structure.

CO5- Understand importance of Bhakti, Sufism and others cult contribution in development of Moral ethics.

CO6- Knowing about Literature, Fine arts and architecture.

PAPER NO. 7 - HISTORY OF MUGHAL INDIA (A.D. 1526 – A.D. 1707)

CO1- Understand development of literature, History writings and archeology.

CO2- To provide knowledge about political development of Mughal period.

CO3- Students learn from this content how feudalism maintains Sultanate state.

CO4- To teach about Commerce and management of commerce activities.

CO5- content teaches about Philosophical knowledge about various human values and ethics.

CO6- understands how literature, Arts and architecture are part of human life and how they help in human life.

PAPER NO. 8 - HISTORY OF INDIA (B.C. 300 - A.D. 650)

CO1- Students learn from this content how sources are useful for history writings.

CO2- Knowing about ancient past and present Political fact and effect of that.

CO3- Useful for understand the economic and social status of ancients people.

CO4- Spread and effects of Jainism, Buddhism and others cult and how his theory affects human being.

CO5- Caves, Temple and Paintings are part of travels and tourism.

CO6- Knowing about contribution of literature in history and its writings.

PAPER NO. 9: FIELDS OF HISTORY (ARCHAEOLOGY, MUSEOLOGY, TOURISM)

CO1- Students get knowledge about Archeology and its functions in history.

CO2- learns scientific history source classification.

CO3- Students get knowledge about Museology and its functions in history

CO4- Tourism is latest subject which learn students from this content.

CO5- learns scope and Nature of Tourism and its employability opportunities.

PAPER NO. 10 : HISTORY OF INDIAN NATIONAL MOVEMENT (A.D. 1885- A.D. 1947)

CO1- Understand Nature and Policies of British rule in India.

CO2- Increase Nationalism and Patriotism in students.

CO3- Understand role of Indian National Congress in National Movements.

CO4- For freedom Sacrifice is necessary this thing learn this content.

CO5- Mahatma Gandhi's Various Movements is Symbols of Non-violence, Truths and Love.

CO6- Communalism is not good for Society, Country and Human life.

PAPER NO. 11 – HISTORY OF INDIA (A.D. 1757- – A.D. 1885)

CO1- Understand Nature of British east India Company and its Colonial Policies in India.

CO2- British implements divide and rule policies in India it's very bad for India.

CO3- from Rayatwari, permant settlements and Mahalwari British's exploit to Indian.

CO4- British Come in India for Trade and they rise great ambition to make ruler of India.

CO5- Role of British's in Indian Modernization is Essential.

PAPER No. 12 and 16 – Project

This Paper is given knowledge about:

Research, meaning of Research

Methods of research

Tactics of research Methodology and its Functions.

Whole paper learns to students how to write Project Work by scientific ways.

PAPER NO. 13 – HISTORIOGRAPHY

CO1- Understand how History is Science and History is one of Arts.

CO2- History is base of Every Subject because every subject has specific history. Knowing about history branches.

CO3- Authenticity and credibility is main base of History Writings.

CO4- Human thinking is important. This thinking makes a theory of thoughts.

CO5- Everything have trend as like history have. History writing skill is very crucial skill .

CO6- “History Make man Wise’. So readings history is useful for us.

PAPER NO. 14 – LANDMARKS IN THE HISTORY OF MODERN WORLD.

CO1- Renaissance and reformation changes in Europe.

CO2- American Revolution gives to message all men is equal’s.

CO3- French revolution output is Freedom, Equality and Charity.

CO4- students learn how Industrial revolution Changes whole world economy.

CO5- War is dangerous for all human. So ‘no war is better than war.’

CO6- inequality learns fights for equality.

Co7- Every war or world wars have harmful consequences.

PAPER NO. 15 – GLIMPSES OF THE HISTORY OF MARATHWADA (U.P. TO A.D. 1948)

CO1- Understand Polity of Marathwada and his development.

CO2- Bhakti. Sufi and other religious Movements learn to students about well human beings thoughts.

CO3- Arts and architecture is part of Developments.

CO4- Increase of injustice is symbols of revolution or changes.

CO5- ‘People willing’ is root of every revolution.

Department of Political Science

papers title: Basic concept of political science

paper code: pol-101

papers outcome: The course enable students to develop an understanding of the basic concepts in political theory and engage in critical analysis of the subject. It also give an oppourunity to the students to dwell upon contemporary theories and views of scholars creating upon contemporary theories and views of scholars creating a deeper understanding and gain knowledge.

paper code : pol-102 Government and Politicss of Maharashtra

papers out comes: The students will understand the federal proess in india the issues underloying political dynamics of regions the changing power relation between centre and the changing power relations between centre and the states over a period of time the nature of paper system and electoral politics in the state level.

paper code pol-103 Basic concepts of political science

peper code pol - 104 Government and politics of Maharashtra

Propers title : Indian Government and politics

paper code pol- 105

paper outcomes: upon completion of this paper, student swill develop an understanding of constitution of indian and the political system that exists in india. Futre the student will have a general understanding about the relation of constition as a guiding document with the functioning of various governance institutions at central state and local level.

Political science course outcome

The department is dedicated to promote teaching and research in diverse fields of political science including Basic concepts of pol-sci, Maharashtra Governement & politics, international relation, Indian Government & Politics indian political thoughts, western political thoughts, political ideology project work the department of offering master's and PhD programmes in political science

To develop comprehensive understanding of the subject be teaching both conventional and New areas of relevance in the domin of political theory and philosophy. Indian Governemnt & politics & international politics

To develop comprehensive and interdisciplinary knowledge by emphasizing inter-likages between various political economics and social issues and challenges.

To develop theortically rich and empirically grounded knowledge

To motivate and inform students about the opportunities and future prospects in the field.

To develop the overall personality of student and prepare them to complete and succeed in their endeavours.

To inculcate the values of tolerance, progressivenss and fraternity that contibutes towards the making

of healthy and prosperous society.

paper Title : International Relations

paper code pol - 106

paper outcomes: By doing this course, student will have developed theoretical insights on international relations and global politics. This will help them undertake academic assignments and research projects related with international issues which are becoming very salient in today's.

paper title: Indian Governments and politics

paper code pol-10

paper title : International Relation

paper code pol: 108

paper code pol: 109

paper outcomes: This is an introductory paper to the concepts, ideas and theories that developed in India. It highlights the main source of the political tradition in ancient India and its development in modern times.

It emphasizes on the distinctive contributions of Indian thinkers to political theorizing and the relative autonomy of Indian political thought. It also situates Indian political thought vis-à-vis other traditions.

paper title: western political thought

paper code pol - 110

paper outcomes: 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.

paper title: political ideologies

paper code No: pol - 111

paper outcomes: This paper studies the role of different political ideologies and their impact in politics. Each ideology is critically studied in its historical context.

In course of its evolution and development the different streams and subtle nuances with each ideology, the changes and continuities in its doctrine and its relevance to contemporary times are highlighted.

paper title: Indian political thinkers

paper code pol - 113

paper title : Western political thoughts

paper code pol - 114

paper title: Indian political ideologies

paper code pol - 115

paper title: project work

paper code pol - 116

Department of Sociology

To provide information to the students with the understanding of historical social economic and intellectual forces of the rise of social theories.

To provide the student with the basic understanding of emergence of sociological thought and to know about pioneer Sociologists stated theories with their contributions of sociology.

To provide and equip the student with the procedures, tools and techniques of social research.

Do sensitise the student about the social problem of contemporary India and to discuss the measures on it.

The course can serve as a helping hand to students to understand primary technique and use of Social Research.

It is very important to focus on studies about rural development in countries like India. Where a large section of the population still lives in rural areas.

Urban communities. Urban planning and urban problems.

The course is designed to understand the dynamics of population.

Sociology is one of the modern social sciences which has a significant role in society.

The course is designed to study approach, principles, concepts, methods and history of sociology.

Department of Economics

Co1. Economics is the study of how societies use scarce resources to produce valuable commodities and distribute them among different people.

Co2. Economics is one of several disciplines that apply the scientific method to the study of human behaviour.

Co3. Economics is considered as social science.

Co4. The study of Economics has gained importance in the era of globalization because of the developing countries in restructuring their economies to greater diversity, efficiency and priorities.

Co5. Economics helps students to establish in-depth understanding of the functioning of domestic and global economies and to develop the necessary and portable skill to perform economic analysis for both public and private sector position.

Course Outcome Specification Economics

B. A. First Year

Micro Economics

COS 1. The students understand the basic nature, scope and meaning of micro-economics.

COS 2. Students acquire the knowledge how to allocate scarce resources to get maximum satisfaction.

COS 3. They understand the structure of market and how the market acquires equilibrium position in different types of market.

Indian Economy

COS 1. Students understand nature of Indian Economy

COS 2. They understand various issues of population, poverty, employment- unemployment and availability and uses of natural resources for sustainable development

COS 3. Understand the concept and measures to remove the poverty.

COS 4. Understand economic planning in India.

Price Theory

COS 1. Students are able to understand the implication of cost and profit maximization for firms.

COS 2. They understand how pricing decisions are made by firms in periods of rapidly changing costs, in different types of markets and market uncertainty.

COS 3. They acquire the knowledge how the prices of productive inputs are determined and how this in turn determines the levels of income enjoyed by their owners.

COS 4. They understand the various methods of pricing

Money Banking

COS 1. Students understand how the Indian Banking System works in the economy.

COS 2. Students are able to gain the knowledge about the nature and functions of money and the role of financial market in the economy.

COS 3. They acquire and demonstrate analytical and problem solving skills within money, banking, and financial markets disciplines.

B. A. Second Year

Macro Economics

COS 1. Students understand the meaning, nature, and scope of macro-economics. They understand the difference between micro-economics and macro-economics.

COS 2. They understand the concept of national income.

COS 3. They understand classical & Keynesian theories of output and employment.

COS 4. Students acquire the knowledge about the nature of trade cycle and how to control it through monetary and fiscal measures

Development Economics

COS 1. Students are able to understand how to optimize utilization of rare resources for sustainable development.

COS 2. They understand which factors lead to economic development and growth.

Public Finance

COS 1. Students acquire the knowledge about the nature and scope of public finance and about the difference among private, public and merit goods.

COS 2. Students are able to understand the fiscal framework for taxation, revenue, debt and spending.

COS 3. They understand the key issues and challenges of fiscal policy in developing economy.

COS 4. They are able to understand the various issues concerning the budget and how the government manages their expenditure through receiving revenue from various sources

Statistical Method

COS 1. Students are able to understand the nature, scope and importance of Statistics.

COS 2. They understand how to calculate and uses of mean, median, mode, range, mean and standard deviation for the analysis of set of data.

COS 3. They identify the direction and strength of correlation between two factors or variables.

COS 4. They are able to compute and interpret the Pearson's correlation.

COS 5. They understand the meaning of index number and how to calculate indices from given data.

B A Third Year

International Economics

COS 1. Students acquire the knowledge about broad principles and theories of international trade which tend to govern the free flow trade in goods and services.

COS 2. They also understand health of economy with the help of balance of payment.

COS 3. Students understand relationship between international trade and nation's standard of living

Agricultural Economics

COS 1. Students understand which factors lead to agricultural development.

COS 2. They acquire the knowledge about importance of agriculture in terms of contribution in national income, employment generation, the main source of livelihood of rural people etc.

COS 3. They understand the factors responsible for the vulnerable situation of farmers.

History of Economic Thought

COS 1. Students understand chronological account of the development of economic ideas in different parts of the world.

COS 2. They gain the detail knowledge about the key models and concept of the history of economic thought.

COS 3. They develop a critical understanding of the influence of evolving economic thought of contemporary global economics.

Research Methodology

COS 1. Students understand important concepts regarding research

COS 2. They identify the role and importance of research in the social sciences.

COS 3. Students understand how to prepare research design and surveys for scientific research.

COS 4. They acquire the knowledge about procedures of sampling, data collection, analysis and reporting.

Industrial Economics

COS 1. Students understand the linkages between industry and agriculture sector.

COS 2. They understand the role of industries in economic and social development

COS 3. They acquire the knowledge where to establish industries and how to organize them.

Indian Economic Thinkers

COS 1. Students understand chronological order of the development of economic thoughts in India.

COS 2. They understand the thoughts of eminent Indian thinkers on the background of economic exploitation by British rulers.

COS 3. They gain the knowledge about the contribution of Amartya Sen on fundamental problems in welfare economics.

Faculty of Commerce

B. Com First Year, First Semester (CBCS Pattern)

Financial Accounting-I (Paper–III)

CO1: It clears the basic concepts of accounting and enables students to prepare journal, ledger and balance sheet of the sole trader.

CO2: To enable the students to calculate depreciation, accounts of non-trading concern and royalty account.

CO3: It makes aware about hire purchase and installment purchase system.

CO4: It clears the concepts of royalty and makes aware students to calculate royalty.

Business Mathematics and Statistics-I (Paper–IV)

CO1: It clears the basic concepts of statistics, data collection, sampling and tabulation of data.

CO2: It provides basic knowledge of positional averages and enabled to calculate it.

CO3: To understand measures of dispersion- mean deviation & standard deviation.

CO4: To provide knowledge to student of determinants and matrices.

Business and Industrial Economics-I (Paper–V)

CO1: This course exposes the students to the significance and scope of business economics.

CO2: To provide the knowledge about indifference curve, consumer's equilibrium, elasticity of demand.

CO3: It provides knowledge regarding the elasticity of demand and demand forecasting.

CO4: To understand the knowledge of various market structures and factors pricing.

Computer Application in Business–I (Paper–VI)

CO1: It provides basic knowledge of computer, computer codes and languages; Computer Codes; Different number systems, Binary, Octal, Hexadecimal, and Decimal.

CO2: To equip the students with the ability to analyze, Interpret and use Computer Application in business enterprise.

CO3: Different Input / Output and storage devices, modern computing devices and Technologies.

CO4: It enables students to work in MS Word with different office documents.

CO5: To provide the knowledge of MSEXCEL, formatting and layout of worksheet, Excel Templates.

Entrepreneurship Development-I (Paper–VII)

CO1: It provides the basic knowledge of entrepreneurship with functions of successful entrepreneur.

CO2: To equip the students with the ability to analyze and interpret Entrepreneurship in Economic Development.

CO3: It clear the concepts of different mechanisms help to start-up.

CO4: This Course provides students how to Set-up a new Venture.

CO5: This course provides Knowledge about essentials of entrepreneurship in 21st century.

CO6: It inform to students regarding different start-up schemes of government and non government agencies.

CO7: It enhances the ability of students regarding project identification and provides information about different information centre in India.

Semester II (CBCS Pattern)

Financial Accounting II (Paper–III)

CO1: To provide knowledge of basic accounting concepts, accounting standards and accounting principles the aim is also to provide the practical accounting knowledge.

CO2: To enable the students about depreciation and royalty account.

CO3: To make an ability to understand accounts of non trading concern and branch accounts.

CO4: To enrich students in financial accounting

CO5: To enhance the ability to solve practical sums of departmental accounts and consignment accounting.

Business Mathematics and Statistics II (Paper–IV)

CO1: To make students learn and understand the concept of Co-relation.

CO2: Student is expected to have knowledge of the types and methods of estimating regression lines.

CO3: This course provides Knowledge about Index Numbers, its types and uses.

CO4: To understand the procedure of application of Probability.

CO5: This Course provides knowledge & ability among students for using statistical tools with Computer.

Business Organization and Management (Paper –V)

CO1: To make students learn and understand the foundation of Indian Business & emerging opportunities in Business.

CO2: Student is expected to have knowledge of the forms of organization.

CO3: This course provides Knowledge about process of Management & Organization.

CO4: To understand the procedure of Leadership, Motivation & Control.

CO5: This Course provides knowledge of functional areas of management.

Business Communication (Paper–VI)

CO1: To make students learn and understand Business communication.

CO2: Student is expected to have knowledge about the Business correspondence i.e. letter writing, preparing the resume and job application letter.

CO3: This course provides Knowledge about report writing.

CO4: To understand the procedure of oral presentation.

CO5: This Course provides knowledge & ability among students for modern forms of communicating.

Optional Group

Entrepreneurship Development (Paper-VII)

CO1: To make students learn and understand the role of Entrepreneurship in Economic Development.

CO2: Student is expected to have knowledge of the emerging trends in Entrepreneurship Development

CO3: This course provides Knowledge about Project identification and Resource Management.

CO4: To understand the procedure of Entrepreneurship Development Program.

CO5: This Course provides knowledge for students how to Selection, Preparation & what are the requirement for the project.

B.Com. S. Y. III Semester III & IV (CBCS Pattern)

Corporate Account-I & II (Paper -III)

CO1: To create awareness about Corporate Accounting in conformity with the provisions of Companies Act and as per Indian Accounting Standards.

CO2: To make aware about the conceptual aspect of corporate accounting.

CO3: To acquaint about issue and forfeiture of shares with re-issue procedure.

CO4: To make practice the final account of Joint Stock Company.

CO5: To enable students to acquire the knowledge of redemption of debentures and preference shares.

CO6: To understand the knowledge of profit prior to incorporation.

Cost Account-I & II (Paper -IV)

CO1: To create ability of students to understand basic cost accounting concepts and the classification of cost.

CO2: To provide the knowledge of material handling methods such as LIFO, FIFO, simple average and weighted average.

CO3: To explain the labor costing methods like incentive scheme, wage payment, time and piece rate etc.

CO4: Awareness will be received about costing methods and techniques.

CO5: To develop overheads knowledge and its methods of distribution.

I.T. Application in Business III & IV (Paper -V)

CO1: To aware about Google workspace.

CO2: To give information to student about importance of email and use of email.

CO3: To enhance the knowledge of using Google form

CO4: To guide students about cyber security

CO5: To make aware about E-Commerce system .

CO6: To encourage students to learn practical application of E-Commerce..

GST Account-I & II (Paper -VI)

CO1: Creating ability of students to learn tax concepts, procedure and legislation pertaining to GST in India.

- CO2: To make perfection in learning of GST Registration process.
- CO3: To understand practical online GST registration process and filling GST returns.
- CO4: To provide knowledge of supply under GST and valuation of supply.
- CO5: Ability of student is to be existed to learn input tax credit.
- CO6: Understand GST accounting with their documentation and keeping process of records in GST.

Marketing Management- (Paper -VII) (Optional Group)

- CO1: To enhance marketing strategy of students.
- CO2: To make aware students about marketing planning.
- CO3: To learned different methods or techniques of marketing
- CO4: To acquaint about marketing management of a firm and its importance.
- CO5: To learn marketing mix and channel of promotio.
- CO6: To enlighten students regarding the agriculture marketing and decision making in marketing.

B.Com. T.Y. (Semester V and VI)

Advanced Financial Accounting-I (Paper No. XXIX) and Advanced Financial Accounting-II (Paper No. XXXV)

- CO1: To equip the students with the ability to analyze, Interpret and use financial account in business enterprise.
- CO2: To introduce stock market, Electricity Company, insolvency accounts accounts of local government and farm accounting.
- CO3: To provide the knowledge of social accounting, departmental accounting, investment accounting, bank final account and accounts of insurance companies.
- CO4: To understand the single entry system.
- CO5: To enable the students to understand the final accounts of banking company.
- CO6: To explore the knowledge of investment accounts.
- CO7: To understand farm accounting and municipal accounting process.

Management Accounting-I (XXX) and Management Accounting-II (XXXVI)

- CO1: To equip the students with the ability to analyze interpret accounting information in managerial decision making.
- CO2: To have a good working knowledge of the subject.
- CO3: To understand the application of management accounting techniques.
- CO4: To provide the knowledge of budgeting and responsibility accounting.

Indirect Taxes and Direct Taxes-I (XXXII) and Indirect Taxes and Direct Taxes-II (XXXVIII)

- CO1: To expose students to the basic tax concepts, procedure and legislation pertaining to indirect tax.
- CO2: To provide the basic of Income tax act 1961.
- CO3: To understand practical knowledge of income for salary and business and profession.

CO4: To provide knowledge to student of all direct sources of income tax.

New Auditing Trends-I (XXXIII) and New Auditing Trends-II (XXXIX)

CO1: To understand about the auditing procedure.

CO2: To enable the students to understand the auditing concepts and new auditing trends.

CO3: To explore the knowledge Cost and Management Audit, Human Resource Audit, Investigation, Trends in Cooperative Audit and Tax Audit are explained throughout the subject work.

Business Regulatory framework I& II

CO1: To understand Indian Contract act 1872.

CO2: To aware to students about consumer protection act 2019.

CO3: To enhance the knowledge of The Right to Information Act 2005.

Computerized Accounting with GST -I &II

CO1: To familiarize the students with the programme Tally ERP 9.

CO2: To familiarize the student with all the latest accounting software

CO3: To Provide the knowledge of vouchers, Ledger, accounting reports, , ERP, and Knowledge Tally software .

Rural Development and agricultural business I & II (Optional Group)

CO1: To familiarize the students with significant of rural development.

CO2: To understand rural development programme in India.

CO3: To enhance the knowledge of agricultural marketing.

M. Com.

M. Com. (First Sem)

Management Process and Organizational Behaviour

Statistics:

CO1: To understand the basic organisational process of management.

CO2: To study organisational behaviour.

M.COM. I YEAR (First Sem) Managerial Economic

CO1: To help students to understand managerial economic and cost benefit analysis.

CO2: To help students in the performance of job.M.COM. I YEAR (First Sem) Corporate Financial Accounting

CO1: To acquaint student corporate accounting system in corporate and global level.

M.COM. I YEAR (First Sem) Business Environment

CO1: To understand the various aspects of business environment and their impact on industry, international trade.

M.COM. I YEAR (Second Sem) Statistical Analysis.

CO1: To make students learn and understand the various application of statistical tools and techniques.

M.COM. I YEAR (Second Sem) Marketing Management

CO1: To understand the policies and procedures market and market research and analysis.

M.COM. I YEAR (Second Sem) Financial Managements

CO1: To understand basics of financial transactions applied in business and industry.

CO2: To understand various crucial decisions regarding financial aspects of business.

M.COM. I YEAR (Second Sem) Strategic Management

CO1: To acquaint students as enhance the decision making abilities of students in situations of uncertainty in dynamic business environment.

CO2: To aware students about best practices followed by business.

M.COM. II YEAR (Third Sem) Research Methodology

CO1: To understand research work concepts of research and practical implication of knowledge acquired through subjects dall collection and analysis, sampling, report writing etc.

M. COM. II YEAR (Third Sem) Human Resources Planning and Development.

CO1: To expose students to the Human Resources Planning methodologies and the various aspects of HR Practices.

M. COM. II YEAR (Third Sem) Business Legislation

CO1: To update the knowledge of different business legislation in practice.

M. COM. II YEAR (Third Sem) International Marketing.

CO1: To understand the importance of international marketing, entry strategies, foreign market selection, product development and distribution.

M. COM. II YEAR (Fourt Sem) Quantitative Techniques.

CO1: To understand Operational Research smf frvodopm sms; udod & decision tree.

M. COM. II YEAR (Fourt Sem) Securities Analysis.

CO1: To update the subject knowledge among the students at corporate level aboutt Securite and Portfolio Managment.

M. COM. II YEAR (Fourt Sem) Advertisement

CO1: To expose students to the advertising basics and the various methodologies to develop, implements and measure the effect of advertisment.

M. COM. II YEAR (Fourt Sem) Project Report.

FACULTY OF BACHALOR OF COMPUTER APPLICATION (B.C.A.)

B.C.A Ist Year

Accountancy I & II

1. Recognize and understand ethical issues related to the accounting profession.
2. Prepare financial statements in accordance with Generally Accepted Accounting Principles.
3. Employ critical thinking skills to analyze financial data as well as the effects of differing financial accounting methods on the financial statements.
4. Effectively define the needs of the various users of accounting data and demonstrate the ability to communicate such data effectively, as well as the ability to provide knowledgeable recommendations

Industrial Economics

1. Provide an understanding of the behavior of firms and the nature of competition in a market economy.
2. Study the working of imperfectly competitive markets, the behavior of firms in these markets, welfare implications and competition policy.
3. Use course materials to judge the behavior of firms in today's economy

Business Statistics and Mathematics

1. Have the versatility to work effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions.
2. Have a broad background in Mathematics and Statistics, an appreciation of how its various sub disciplines are related, the ability to use techniques from different areas, and an in-depth knowledge about topics chosen from those offered through the department.

Operating System

1. Identify the components of various PC operating systems and recognize terminology associated with these systems.
2. Demonstrate how to create a system disk, data disk and bootable CD or Flash Drive.
3. Perform a typical system configuration/installation of an operating system.
4. Through class discussion, reading materials, and individual exercises demonstrate the ability to perform DOS functions at the command line prompt.

Industrial Organization

1. Explain how price and non-price competition among firms affect economic welfare.
2. Explain how market structure affects behavior and vice versa.

3. Analyze and evaluate models of monopoly, oligopoly and competitive markets.
4. Analyze basic antitrust and regulatory policy issues.

Programming in C & C++

1. Design an algorithmic solution for a given problem. 2. Draw flowcharts for the solution.
2. Write a maintainable C program for a given algorithm.
3. Write well documented and indented program according to coding standards

Principle of Management I & II

1. Discuss and communicate the management evolution and how it will affect future managers.
2. Observe and evaluate the influence of historical forces on the current practice of management.
3. Identify and evaluate social responsibility and ethical issues involved in business situations and logically articulate own position on such issues.
4. Explain how organizations adapt to an uncertain environment and identify techniques managers use to influence and control the internal environment

B.C.A IInd year

E-Business Essential

1. Discuss modern computing
2. Infrastructures from the perspective of the internet and organizations
3. Discuss and explain theoretical and practical issues of conducting business over the internet and the Web
4. Reflect on general principles revealed through practical exploration of specific tools, techniques and methods in e-business.

Business Law I & II

1. Appreciate the relevance of business law to individuals and businesses and the role of law in an economic, political and social context.
2. Identify the fundamental legal principles behind contractual agreements.
3. Examine how businesses can be held liable in tort for the actions of their employees.
4. Understand the legal and fiscal structure of different forms of business organizations and their responsibilities as an employer.

Data structure & Algorithm

1. To design and implementation of various basic and advanced data structures.
2. To introduce various techniques for representation of the data in the real world.
3. To develop application using data structures
4. To teach the concept of protection and management of data

D.B.M.S

1. The learner will be able: To describe data models and schemas in DBMS
2. To understand the features of database management systems and Relational database.
3. To use SQL- the standard language of relational databases.

Cost and Management Account

1. Explains the concept of management accounting
2. Explains the importance of management accounting for businesses do Cost-Volume-Profit analysis
3. Explains fixed, variable, semi-fixed and semi variable cost concepts
4. Analyzes the relationship between the cost-volume and profit
5. Explains break-even sales price, break-even sales volume, the total contribution margin, the unit contribution margin, margin of safety, security ratio, profit margin concepts.

Entrepreneurship Development

1. Have developed advanced knowledge on how to assess business opportunities and an in-depth understanding of what typically characterize successes and failures.
2. You have developed advance knowledge about key processes necessary to bring new products and services to market and key challenges facing the entrepreneur at different stages of the entrepreneurial voyage
3. Have developed an understanding of scientific research methods and theories relevant for the field
4. Students are able to assess the commercial viability of new technologies, business opportunities and existing companies

Java Programming

1. Use standard and third party Java's API's when writing applications.
2. Understand the basic principles of creating Java applications with graphical user interface (GUI).
3. Create rich user-interface applications using modern API's such as JAVAFX.
4. Understand the fundamental concepts of computer science: structure of the computational process.

MIS & DSS

1. The course would expose the students to the managerial issues relating to information systems and help them identify and evaluate various options in Management Information Systems.
2. At the end of the course, it is expected that students are able to understand the usage of Information Systems in management.
3. The students also would understand the activities that are undertaken in acquiring an Information System in an organization.

B.C.A. IIIrd Year

Organizational Behavior

1. Evaluate the developments of basic conflict resolutions.
2. Discuss the main problems about stress, power and politics and ethics.
3. Discuss group and group dynamics.

Banking & Insurance

1. To carry out financial analysis of banks and insurance companies,
2. To prioritize ethical values, to keep up with developments in financial markets,
3. To analyze risks and financial problems,
4. To have the ability to use basic theoretical and practical knowledge gained in the field in an advanced education level of the same field or at the same level of another field.

Software Engineering

1. Study a body of knowledge relating to Software Engineering, Software reengineering, and maintenance.
2. Understand the principles of large scale software systems, and the processes that are used to build them.
3. Have skills in the most widely used approach to software construction – object orientation (OO), including OO requirement specifications, OO analysis, OO design, OO.
4. Learning OO testing and maintenance.

Software Testing

1. Apply modern software testing processes in relation to software development and project management.
2. Create test strategies and plans, design test cases, prioritize and execute them.
3. Manage incidents and risks within a project.
4. Contribute to efficient delivery of software solutions and implement improvements in the software development processes

Element of Commercial Portals

1. Develop knowledge and skills necessary to gain employment as computer network engineer and network administrator.
2. Independently understand basic computer network technology.
3. Understand and explain Data Communications System and its components.
4. Identify the different types of network topologies and protocols.

System programming

1. Study the architecture of a hypothetical machine, its assembly language, macro language.
2. Program in assembly language.

3. Understand the structure and design of assemblers, linkers and loaders.
4. Understand the concepts and theory behind the implementation of high level programming languages

Service Marketing

1. Identify core concepts of marketing and the role of marketing in business and society.
2. Knowledge of social, legal, ethical and technological forces on marketing decision-making.
3. Appreciation for the global nature of marketing and appropriate measures to operate effectively in international settings.
4. Ability to develop marketing strategies based on product, price, place and promotion objectives.

Project

1. At the end of the course the students will Understand .NET Framework and describe some of the major enhancements to the new version of Visual Basic.
2. Describe the basic structure of a Visual Basic.NET project and use main features of the integrated development environment (IDE)
3. Create applications using Microsoft Windows® Forms
4. Create applications that use ADO.NET.
5. Working with Multiple Forms

Department of B.Voc. Livestock Production and Management

Program Outcome

This program is one of the most elemental pillars of wisdom and technology studied at undergraduate footing. The program helps to develop scientific approach and postures of scholars, which

in turn to ameliorate and make our society since the scientific developments can make a nation or society to grow at a fleetly.

After studying this program, scholars will be more ready to learn and know about different natural

systems and taxonomy, their collaboration and control as well as elaboration, geste of colorful creatures and natural places of the creatures in the ecosystem. Also, they will give a platform for classical genetics in order to understand heritage of different traits and conditions, genetically diseases among populations, their background and relate with contemporary and ultramodern ways like, editing, and molecular individual tools. To provide judicious mix of skills relating to a profession and appropriate content of general education.

After completing this course students will have adequate knowledge and skills, so that they are work ready at each exit point of the programme. This also will provide flexibility to the students by means of pre-defined entry and multiple exit points. This will meet employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.

Practical and theoretical chops gained in program will be helpful in designing different public health strategies for social weal.

The program has been designed to give in- depth knowledge of applied subjects and the inculcation of employment chops so that scholars can make a career and come an entrepreneur in different fields.

After the completion of the Livestock Production and Management degree there are colorful other options available for the wisdom scholars.

Program specific Outcome

Students enrolled in Livestock Production and Management for degree program in B.Voc. will study and acquire complete knowledge of correctional as well as affiliated natural knowledge which will give them competitive advantage in pursuing advanced studies from India as well as abroad countries. And look for jobs in academia, exploration and diligence. They are suitable to rightly use natural instrumentation and proper laboratory ways. Students will be suitable to communicate natural knowledge in oral and spoken form. Students should be suitable to identify, classify and separate conventional and non-conventional livestock grounded on their morphological, anatomical and association, they will also be suitable to describe profitable, ecological and social significance of livestock in their life. This will produce a curiosity and mindfulness among them to explore their making their profession. The procedural knowledge about relating and classifying creatures will give students professional advantages in tutoring, exploration. Students will be suitable to get employment in various fields local and national industries, various departments of government, dairy farms, piggery, livestock stations, stables, goat farms etc. The students will be skilled at all practices of fields. These methodologies will provide an extra edge to our students, who wish to undertake higher studies and projects.

Course Outcome

Livestock production management-I

CO1: Students becomes skilled to identify various endogenous species of livestock.

CO2: The students will aware about livestock management.

CO3: Students will able to maintain food hygiene.

CO4: Students will get knowledge of demographic records.

Animal nutrition and feed technology

CO1: Students will aware with nutrition of various livestock.

CO2: Student will get knowledge of feeds and fodders of livestock.

CO3: Students will get knowledge of feed management.

CO4: Students will aware with nutritive facts of livestock.

CO5: Students will aware with dietary factors of livestock.

Fodder production and grassland management

CO1: The students will get knowledge about fodder production.

CO2: The students will chop with all practices processing fodder.

CO3: The students will get knowledge of fodder management dealing scarcity.

CO4: Students will able to manage grassland.

CO5: Students will get chopped for all practices about fodder production and grassland management.

Soft Skills-I

CO1: Student will able to get communication skill.

CO2: Students will aware with Personality Development Factors.

CO3: Communication anabolism will demonize.

Livestock production management-II

CO1: The students will aware with various breeds of swine and horse.

CO2: The students will aware with various fall habits of horses.

CO3: Student will be aware with various diseases in poultry birds.

CO4: Student will be chopped with handle all poultry practices.

Avian production management

- CO1: Student will be aware with nutrients required by poultry birds.
- CO2: Student will aware with management of poultry farm.
- CO3: Student will aware all the practices regarding layer and broiler birds.
- CO4: Student wills aware with all type of poultry farms practices.

Applied nutrition

- CO1: Student will aware with digestibility of livestock.
- CO2: Student will aware with balanced diet of livestock.
- CO3: Student will aware with remove anabolisms regarding digestion in livestock.

Basics of computers

- CO1: Student will aware with basic skills of computers.
- CO2: Student will aware with basic Operating systems.
- CO3: Student will handle to create database, modifying table creating forms.

Soft Skills-II

- CO1: Student will able to compose various reports.
- CO2: Student will able to manage programs.
- CO3: Students will have generated well developed communication skills.

Livestock and poultry breeding

- CO1: Student will aware with various breeding techniques.
- CO2: Student will aware with selection of appropriate breed for a area.
- CO3: Student will aware with knowledge of breeding programmes in the state and country.
- CO4: Student will aware with Conservation of germplasm and Current livestock.

Commercial poultry production and hatchery management

- CO1: Student will aware with housing system of poultry.
- CO2: Student will aware with rearing stages of poultry birds.
- CO3: Student will aware with comforts of poultry birds in rearing.
- CO4: Student will aware with nutrients in various life stages of poultry birds.

Milk and meat hygiene

CO1: Student will get knowledge of milk hygiene in relation to public health.

CO2: Student will get knowledge of hygienic handling/ management of dairy equipment

CO3: Student will get knowledge of methods of inspection of dairy products.

CO4: Student will aware with hazard analysis and critical control point (HACCP) system.

Livestock and poultry breeding

CO1: Student will get knowledge of economic traits of Livestock & poultry in our country.

CO2: Student will get knowledge of keeping records of poultry breeds for rearing.

CO3: Student will get knowledge of management at breeding centre.

CO4: Student will aware with various methods of breeding.

Personality Development

CO1: Student will get knowledge of personality development and behavioral dimensions.

CO2: Student will get knowledge of interpersonal relations in society.

CO3: Student will get knowledge of factors influencing Attitude, Challenges to face it.

CO4: Student will aware with motivational factors like Intrinsic & Extrinsic Motivators.

Human values

CO1: Student will get knowledge of Concept, Types of values and its usage in life.

CO2: Student will get knowledge of Responsibilities Fundamental Rights and Power Importance.

CO3: Student will get knowledge of Self dependency and Self management in life.

Milk and milk products technology

CO1: Student will get knowledge of milk processing plant and its management.

CO2: Student will get knowledge of quality of milk and deal to issues related it.

CO3: Student will get knowledge of Microbiological deterioration of milk and milk products.

CO4: Student will aware with various processes regarding milk and milk product.

Abattoir practices and animal products technology

CO1: Student will get knowledge of all type of abattoirs.

CO2: Student will get knowledge of trading livestock and poultry.

CO3: Student will get knowledge of byproducts of pharmaceutical value of livestock.

CO4: Student will get knowledge of Impurity and adulteration of byproducts.

Avian pathology

CO1: Student will get knowledge of various diseases and Pathogenesis in livestock.

CO2: Student will get knowledge of vaccination and treatment of diseases.

CO3: Student will get knowledge of nutrient and their deficiency.

CO4: Student will get knowledge of different vices in animals.

Human Rights

CO1: Student will get knowledge of nature and importance of human rights in life.

CO2: Student will get knowledge of revolution its need and impact.

CO3: Student will get knowledge of fundamental rights of human beings.

CO4: Student will get knowledge of role of human right in civilization and development.

Epidemiology and zoonoses

CO1: Student will get knowledge of factors influencing occurrence of livestock diseases and production.

CO2: Student will get knowledge of epidemiological methods regarding livestock.

CO3: Student will get knowledge of surveillance and monitoring of livestock diseases

CO4: Student will get knowledge of National and International regulations on livestock diseases.

Meat science

CO1: Student will get knowledge of Retrospect and prospect of meat Industry in India.

CO2: Student will get knowledge of getting more and more profit from poultry and livestock.

CO3: Student will get knowledge of Formulation and development of meat and sea foods.

CO4: Student will get knowledge of nutritive values of various livestock food and food products.

Pet animal breeding and management

CO1: Student will get knowledge of desi and international breeds of dogs.

CO2: Student will get knowledge of nutritional requirement of various stages of dogs.

CO3: Student will get knowledge of principles of training of dogs.

CO4: Student will get knowledge of common diseases affecting dogs.

Environment and environmental hygiene

CO1: Student will get knowledge of scope and importance. Ecosystem

CO2: Student will get knowledge of environmental pollution-causes, and effects and control.

CO3: Student will get knowledge of disaster management.

CO4: Student will get knowledge of ventilation systems within animal houses.

Livestock economics and marketing

CO1: Student will get knowledge of production, consumption, exchange and distribution of

product.

CO2: Student will get knowledge of livestock contributions to national economy

CO3: Student will get knowledge of various laws and types of supply.

CO4: Student will get knowledge of facilitative functions -standardization, risk bearing dealing
Livestock business.

Livestock entrepreneurship

CO1: Student will get knowledge of livestock entrepreneurship

CO2: Student will get knowledge of avenues of entrepreneurship/employment in private and
Public sectors.

CO3: Student will get knowledge of essential criteria for development of entrepreneurship in
livestock.

CO4: Student will get knowledge of various ways of financial support for entrepreneurship.
