M.S.P.Mandal's

Sunderrao Solanke Mahavidyalaya, Majalgaon Dist- Beed.

Department of Chemistry

Sr. No.	Program	Program Objectives	Program Specific outcomes
1	BSc. Chemistry	To provide in depth knowledge of scientific and technological aspects of Chemistry · To familiarize with current and recent scientific and technological developments · To enrich knowledge through problem solving, hand on activities, study visits, projects, etc. · To train students in skills related to research, education, industry, and market. · To create foundation for research and development in Chemistry · To develop analytical abilities towards real world problems · To help students build-up a progressive and successful career in Chemistry	1. After completion of program, students will be able to have in-depth knowledge of basic concepts in Chemistry 2. Students will be able to apply the laws of Physics in real life situations to solve the problems. 3. Students develop the aptitude of doing research by undertaking small projects. 4. The student will have set his foundation to pursue higher education in Chemistry. 5. After completing the program student will have developed interdisciplinary approach and can pursue higher studies in subjects other than Chemistry
2.	MSc. Chemistry	1. to develop a strong footing in the fundamentals and specialize in the disciplines of his/her liking and abilities. 2. to develop in depth understanding of various aspects of the subject. 3. The principles in Chemistry will be studied in depth. 4. To have deeper understanding of laws of nature through subjects like spectroscopy, Nanotechnology, quantum mechanics, synthetic organic Chemistry, photochemistry, etc. 5. The ability of problem solving will	1. The student will have in depth knowledge of the subject. 2. Students will have acquired the necessary communication skills to teach Chemistry in Colleges. 3. Students will have acquired the necessary skills for working in research institutes. 4. Students will have acquired the necessary skills and expertise to work in industry related to materials processing and quality control

		be enhanced. Students can apply principles in chemistry to real life problems.	

Courses offered – Under graduate Chemistry

Sr.No	Class	Course	Course Outcomes
1	F.Y.B.Sc. Chemistry (First semester)	**Paper I Inorganic Chemistry**	This course enables students to understand basic laws regarding states of matter, structure of the atom. Students are also made aware of periodic properties. Elements from s block and p block are studied
		Paper II Organic Chemistry	Students are made aware of fundamental concepts of organic and inorganic chemistry that governs the structure, bonding, properties, stereochemistry, alkanes alkenes and arenes and alkyl halides.
		Paper III Lab Course I	Chemistry is an experimental subject; the practical course is intended to achieve the basic skills required for understanding the concepts and authenticating the basic laws and principles of chemistry & helps in the development of practical skills of the students.
2	F.Y.B.Sc. Chemistry (Second semester)	**Paper IV Physical chemistry**	Students are made aware of mathematical concepts, different states of matter are studied in detials like gaseous state, liquid state and solid state. Chemical kinetics and catalysis and collodial state are studied in details
		Paper V Inorganic Chemistry	In this students study noble gases, theory of volumetric analysis. Chemical bonding and nuclear chemistry is studied in details
		Paper VI Lab course II	Organic estimation and and organic qualitative analysis is studied in details.
3	S. Y. B.Sc. Chemistry (Third semester)	**Paper VII Organic Chemistry**	Alcohols, phenols. Organic acids, aldehydes and ketones and organic compounds of nitrogen are studied in details
		Paper VIII Physical Chemistry	Students are made aware of basics of thermodynamics and chemical equilibrium which is very important in physical chemistry.
		Paper IX Lab course III	Students are trained in non instrumental and gravimetric experiments.
	S. Y.	**Paper X**	Students are made aware of the principles of various

	B.Sc. Chemistry (Fourth semester)	**Inorganic Chemistry**	theories of bonding likeWerner's theory VBT, CFT, MOT. They are also made aware of the principles of isomerism, nomenclature, and structures of inorganic complexes. Chemistry of Lanthanides and actinides and Arrhenius, Bronsted-Lawry, The Lux-Flood, Solvent System and Lewis Concept of Acids and Bases
		Paper XI Physical Chemistry	Students are introduced to phase equilibria, water system, two components system like lead silver system, Compound Formation with congruent Melting Point (Mg-Zn) and Incongruent Melting Point (FeCl3-H2O) System. Freezing Mixture, Acetone-Dry Ice.Electrochemistry is studied in details.
		Paper XII Lab course IV	Students are trained in handling instruments like conductivity meter, polarimeter, pH meter, colorimeter, refractometer etc. students are trained in Preparation, Crystallization and Physical Constant organic compounds
4	T. Y. B.Sc. Chemistry (Fifth semester)	**Paper XIII Physical Chemistry**	Students have introduced the basic concept of physical chemistry. Elementary quantum mechanics, Students learn principles and applications rotational spectroscopy, laws of photochemistry, jablonsiki diagram, nanomaterial, its different methods of synthesis.
		Paper XIV Organic Chemistry	Spectroscopic techniques like PMR, U.V., and I.R. are introduced. Students learned to differentiate organic compounds with the help of these spectroscopic techniques, students learn Organometallic Compounds, fats oil and detergents wherein they study types of animals fats and oils and about saponification value etc
		Paper XV Lab course V	In this students are trained in Separation and Identification of both components of organic binary mixture.
	T. Y. B.Sc. Chemistry (Sixth semester)	**Paper XVI Inorganic Chemistry**	Students are made aware of the principles of various theories of bonding like Werner's theory VBT, CFT, Electronic Spectra of transition metal complexes types of Electronic TransitionsSelection rules for d -d transitions They are also made aware of Nomenclature and classification of Organometallic Compounds Preparation, Properties, Bonding and Applications of alkyls and aryls of - Li, Al, Hg, Sn and Ti. In Bioinorganic Chemistry students made aware of essential and trace elements in biological processes Metalloporphyrins with special reference to hemoglobin and myoglobin. Students learn about the different techniques in chromatography for the separation of compounds
		Paper XVII Organic Chemistry	Herein students learn about different heterocyclic compounds and their methods of synthesis, carbohydrate chemistry, different synthetic polymers' properties, uses and synthesis of polyvinyl chloride, polyvinyl acetate, polystyrene, polyacrylonitrile,

			Nylon 6, Nylon 66. Synthetic dyes like synthesis of methyl orange, Congo red, malachite green, crystal violet, Alizarin and indigo dyes. Students learn about synthesis of chloromycetien,paracetamol,phenacetien
		Paper XVIII Lab course VI	Students are trained in organic estimation of like Estimation of Carbonyl group by hydrazone formation method, Estimation of vitamin C in commercial soft drink / Glucon D, Estimation of ascorbic acid and Estimation of Saponification value of oil. Students are trained to prepare organic compounds like Hydrazobenzene, Phthalic anhydride, 2, 4 dinitrophenyl hydrazone and picrate of Naphthalene and anthracene and check its purity by using chromatography.

Courses offered –Post graduate Chemistry

Sr.No	Class	Course	Course Outcomes
1	M.Sc I Semester- I Theory courses	**CHE- 101 Analytical Chemistry**	Students are made aware of basic concepts of analytical chemistry. Statistical treatment of analytical data is taught thoroughly. Students are taught about phase extraction and chromatographic techniques by means of which qualitative and quantitative analysis is done.
		CHE- 102 Inorganic Chemistry	Students are taught about group theory and symmetry concepts, group multiplication table, matrix representation of symmetry elements. The course aims to provide reaction mechanism of transition metal complexes and electron transfer reactions. Students are made to understand metal ligand equilibria in solution and inorganic chemistry in biological systems.
		CHE- 103 Organic Chemistry	It is the basic course in organic chemistry. Students are introduced with concepts like acidity, the basicity of organic molecules, electrophile, nucleophile, and good and bad leaving groups. Students are introduced to the stereochemistry of disubstituted cyclohexane. Students are able to understand mechanism of organic reaction. Arrow drawing concept which is important part of reaction mechanism is explained thoroughly in this course. Students are able to identify different types of organic reactions and also they can understand reactivity profile of organic molecules and stereochemistry in details.
		CHE- 104 Physical Chemistry	The course aims to provide a fundamental understanding of physical chemistry, students learn the concept of ionic equilibria and

			biological reactions. Chemical potential, Expressing Chemical equilibrium in terms of chemical potential. Students are made aware of Chemical kinetics and reaction dynamics topics such as Reversible reactions, the principle of microscopic reversibility, steady state approximation, elucidating mechanism using SSA. Electrochemistry and surface chemistry
	M.Sc I Semester- II Theory courses	**CHE- 205 Spectroscopic methods of analysis**	The course aims to provide an understanding of physical chemistry, In this course, the fundamentals of molecular spectroscopy are introduced. Students learn basic elements of rotational, vibrational, Raman and electronic spectroscopy. Nuclear and radiation Chemistry concepts are introduced. Students get familiar with Chemical Bonding**:** Valence Bond theory, hybrid orbitals, geometry and hybridization, Molecular Orbital Theory, linear variation method, The second section deals with the basic introduction to various Spectroscopic methods like UV, IR. ^{1}H, ^{13}C-NMR and their application in structure determination of various organic molecules.
		CHE- 206 Inorganic Chemistry	Students are made to understand spectroscopic term symbols, electronic spectra and magnetic properties of metal complexes, chemistry of metal carbonyls, metal nitrosyl compounds. Students are made aware of dioxygen and dinitrogen complexes.
		CHE- 207 Organic Chemistry	It is the basic course in organic chemistry. Students are introduced with concepts like acidity, the basicity of organic molecules, electrophile, nucleophile, and good and bad leaving groups. Students are introduced to the addition reactions of carbon carbon multiple bond and carbon hetero multiple bond. This course is specially designed for some advanced organic reactions viz. coupling reactions, multicomponent reactions, olefination reactions, etc. This also includes designing organic synthesis using rearrangement reactions which will help students to plan the synthesis of new organic molecules.
		CHE- 208 Physical Chemistry	The course aims to give fundamental understanding and applications of Crystal structure, and Quantum Chemistry. Basic elements of quantum chemistry are also introduced. Students are made aware of phase rule and photochemistry laws of photochemistry, jablonsiki diagram etc.
	M.Sc. I & II	**CHE- 209 Laoratory**	Students are trained in determination of

	Semester Laboratory Course	**course (General and Analytical)**	saponificatgion value of oil, hardness of water, aspirin in tablet, COD in the water sample etc. Students are trained in techniques such as pH metry, Conductometry, Potentiometry, Colorimetry, Spectrophotometry, photometry, etc. They learn to use these techniques in order to understand various chemical reactions.
		CHE- 210 Laoratory course (Inorganic)	Students are trained in the Inorganic Qualitative Analysis of different mixtures of inorganic compounds, and the separation of the metal ions from binary mixture solutions. Students are trained in synthesis, characterization and estimation of metal ions from the metal complexes using the techniques of gravimetry and volumetry.
		CHE- 211 Laoratory course (Organic)	Chemistry is an experimental subject; the practical course is proposed to achieve the basic skills required for understanding the reactivity of organic molecules and validating the basic principles. It helps in the development of practical skills of the students. Students are trained to different purification techniques in organic chemistry like recrystallization, distillation, steam distillation, and extraction. Students are made aware of safety techniques and the handling of chemicals. Students are made aware of carrying out different types of reactions and their workup methods
		CHE- 212 Laoratory course (Physical)	Students are trained to use techniques such as pH metry, Conductometry, Potentiometry, Colorimetry, Spectrophotometry, Refractometry etc. These techniques will enable them to work as quality control chemist in various labs and such organizations.
	M.Sc. II Semester-III Theory courses	**CHE-313 Structural elucidation by spectral methods**	Students are trained in the basic introduction to various Spectroscopic methods like UV, IR. ^{1}H, ^{13}C-NMR and Mass Spectrometry and their application in structure determination of various organic molecules from spectal problems.. students are made aware of basic of Mossbauer spectroscopy and ESR spectroscopy.
		CHEO-314 Organic Synthesis	This course is specially designed for some advanced organic reactions viz. coupling reactions, multicomponent reactions, olefination reactions, and various oxidation and reduction reactions. Students are made aware of organic reagents, reaction intermediates and formation of carbon carbon bonds via organometallic reagents.
		CHEO-315	Students are made aware of basics of bioorganic

		Asymmetric synthesis and Bio-organic Chemistry	chemistry, enzyme chemistry, co-enzyme chemistry supramolecular chemistry and biomimetic chemistry and asymmetric synthesis. Students are made to think about new stereoselective reactions as far as the asymmetric synthetic part is concerned. This course also includes the resolution of racemic modification and stereochemistry.
		CHEO-316 Photochemistry, Free radicals and Pericyclic Reactions	This course includes pericyclic and photochemical reactions along with reactive intermediates. Students are made aware of different types of pericyclic reactions like electrocyclisation, cycloaddition, sigmatropic, chelotropic and group transfer. Molecular orbital theory, PMO and FMO theory are thoroughly discussed. Principles of photochemical reaction, photochemistry of carbonyl compounds are thoroughly discussed.
	M.Sc. II Semester-IV Theory courses	**CHEO-417 Organic Synthesis: Retrosynthetic Approach**	Retrosynthetic analysis concepts are explained to students. Students are made aware of disconnection approach, protecting groups, one group c-c disconnections, two group c-c disconnections, ring synthesis, complex molecules.
		CHEO-418 Advanced Organic and Heterocyclic Chemistry	The first section part A of this course is aimed to make students familiar with various basic organic reactions with different examples along with their mechanism under the titles of rearrangements and name reactions. The second section part B deals with fundamental theoretical understanding of heterocyclic chemistry, including alternative general methods for ring synthesis and application of such methods for the preparation of specific groups of heterocyclic systems.
		CHEO-419 Chemistry of Natural products	Students are made aware of chemistry of natural products. In this course they learn how nature uses various pathways to synthesize large number of primary and secondary metabolites though the process of biogenesis. Following the same idea, that helps the chemists to plan synthetic strategies to prepare those pharmaceutically important compounds in laboratory. This also involves multistep laboratory synthesis of some of the important secondary metabolites
		CHEO-420 Medicinal Chemistry	In this course, students are introduced to drugs, their chemical & biological properties, mode of action and discovery. They also learn drug targets, antimicrobial, anticancer drugs, antibiotics, antifugals, antivirals drugs, etc. They are also itroduced to gastrointestinal &

			CNS disorders and their treatments. This course also includes QSAR which will be helpful for designing & developing drugs.
	M.Sc. III & IV Semester Laboratory Course	**CHEO-421 Laboratory Course (Organic)**	Students are trained in the qualitative analysis of ternary mixtures of which at least one is liquid and the other is water soluble compound.
		CHEO-422 Laboratory Course (Organic)	This gives hands on experience to students about the various organic transformations in the laboratory. This involves preparations of organic compounds through multistep synthesis. They get training to set up new reactions, follow-up of the progress of reaction by techniques like TLC, MP/BP and workup of reactions to purify desired products. Microscale preparations also help the students to improve upon their practical skills and reduce environmental pollution. Purification of product by column is taught.
		CHEO-423 Laboratory Course (Organic)	Here students are trained in one stage based on the green synthetic protocols as covered in theory syllabus. Students are trained in structural elucidation organic compounds by spectral analysis.
		CHEO-424 Project Work (Organic)	Students are trained in preparation of dissertation which includes literature survey, aim, scope of the project, experimental details and concluding discussion.

DEPARTMENT OF BOTANY

Programme Outcomes

1. Knowledge and understanding of:

- The range of plant diversity in terms of structure, function and environmental relationships.
- The evaluation of plant diversity.
- Plant classification and the flora of Maharashtra. 4. The role of plants in the functioning of the global ecosystem.
- A selection of more specialized, optional topics. 6. Statistics as applied to biological data.

2. Intellectual skills – able to:

- Think logically and organize tasks into a structured form.
- Assimilate knowledge and ideas based on wide reading and through the internet.
- Transfer of appropriate knowledge and methods from one topic to another within the subject.
- Understand the evolving state of knowledge in a rapidly developing field. 5. Construct and test hypothesis.
- Plan, conduct and write a report on an independent term project.

3. Practical skills:

- Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules. 1. Interpreting plant morphology and anatomy.
- Plant identification.
- Vegetation analysis techniques.
- A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry.
- Analyze data using appropriate statistical methods and computer packages.
- Plant pathology to be added for sharing of field and lab data abtained.

4. Transferable skills:

- Use of IT (word-processing, use of internet, statistical packages and databases). 2.
- Communication of scientific ideas in writing and orally.
- Ability to work as part of a team.
- Ability to use library resources.
- Time management.
- Career planning.

5. Scientific Knowledge:

Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.

6. Problem analysis:

Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.

7. Design/development of solutions:

Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health

8. Conduct investigations of complex problems:

Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and development of the information to provide valid conclusions.

9. Modern tool usage:

Create, select, and apply appropriate techniques, resources, and modern instruments and equipments for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.

10. The Botanist and society:

Apply reasoning informed by the contextual knowledge to assess plant diversity, its importance for society, health, safety, legal and environmental issues and the consequent responsibilities relevant to the biodiversity conservation practice.

11. Environment and sustainability:

Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

12. Ethics:

Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.

13. Individual and team work:

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

14. Communication:

    Communicate effectively on complex engineering activities with the engineering community and with 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.

15. Project management and finance:

    Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

16. Life-long learning:

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

Course Outcomes of B.Sc. Botany

1. Critically evaluation of ideas and arguments by collection relevant information about the plants, so as recognize the position of plant in the broad classification and phylogenetic level.
2. Identify problems and independently propose solutions using creative approaches, acquired through interdisciplinary experiences, and a depth and breadth of knowledge/expertise in the field of Plant Identification.
3. Accurately interpretation of collected information and use taxonomical information to evaluate and formulate a position of plant in taxonomy.
4. Students will be able to apply the scientific method to questions in botany by formulating testable hypotheses, collecting data that address these hypotheses, and analyzing those data to assess the degree to which their scientific work supports their hypotheses.
5. Students will be able to present scientific hypotheses and data both orally and in writing in the formats that are used by practicing scientists.
6. Students will be able to access the primary literature, identify relevant works for a particular topic, and evaluate the scientific content of these works.
7. Students will be able to apply fundamental mathematical tools (statistics, calculus) and physical principles (physics, chemistry) to the analysis of relevant biological situations.
8. Students will be able to identify the major groups of organisms with an emphasis on plants and be able to classify them within a phylogenetic framework. Students will be able to compare and contrast the characteristics of plants, algae, and fungi that differentiate them from each other and from other forms of life.
9. Students will be able to use the evidence of comparative biology to explain how the theory of evolution offers the only scientific explanation for the unity and diversity of

life on earth. They will be able to use specific examples to explicate how descent with modification has shaped plant morphology, physiology, and life history.

10. Students will be able to explain how Plants function at the level of the gene, genome, cell, tissue, Flower development. Drawing upon this knowledge, they will be able to give specific examples of the physiological adaptations, development, reproduction and mode of life cycle followed by different forms of plants.
11. Students will be able to explain the ecological interconnectedness of life on earth by tracing energy and nutrient flow through the environment. They will be able to relate the physical features of the environment to the structure of populations, communities, and ecosystems.
12. Students will be able to demonstrate proficiency in the experimental techniques and methods of analysis appropriate for their area of specialization within biology

Programme specific outcome

Class	Paper No.	Paper Name	Outcomes
	Semester-I		
B. Sc. - I	I	Diversity of Cryptogams-I	1. Develop understanding on the concept of microbial nutrition. 2. Classify viruses based on their characteristics and structures. 3. Develop critical understanding of plant diseases and their remediation. 4. Examine the general characteristics of bacteria and their cell reproduction and Recombination . 5. Increase the awareness and appreciation of human friendly viruses, bacteria, Algae and their economic importance
	II	Morphology of Angiosperms	
	III	Practical based on Paper- I and II	1. Develop practical understanding on the concept of microbial nutrition. 2. Classify viruses based on their characteristics and structures. 3. Develop critical practical understanding of plant diseases and their remediation. 4. Examine the general characteristics of bacteria and their cell reproduction and Recombination . 5. Conduct experiments using skills appropriate to subdivisions

	Semester-II		
	IV	Diversity of Cryptogams-II	1. Develop critical understanding on morphology, anatomy and reproduction of Bryophytes and Pteridophytes. 2. Understanding of plant evolution and their transition to land habitat.
	V	Histology, Anatomy and Embryology	1. Develop an understanding of concepts and fundamentals of plant anatomy. 2. Examine the internal anatomy of plant systems and organs. 3. Develop critical understanding on the evolution of concept of organization of shoot and root apex. 4. Analyze the composition of different parts of plants and their relationships. 5. Evaluate the adaptive and protective systems of plants.
	VI	Practical based on Paper- I and II	1. Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Bryophytes and Pteridophytes. 2. Analyze the composition of different parts of plants and their relationships. 3. Evaluate the adaptive and protective systems of plants.
	Semester-III		
	VII	Taxonomy of Angiosperms	1. Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium. 2. Evaluate the Important herbaria and botanical gardens. 3. Interpret the rules of ICN in botanical nomenclature. 4. Assess terms and concepts related to Phylogenetic Systematics. 5. Generalize the characters of the families according to Bentham & Hooker's system of classification
	VIII	Plant Ecology	1. Understand core concepts of biotic and abiotic Classify the soils on the basis of physical, chemical and biological components. 2. Analysis the phytogeography or phytogeographical division of India. 3. Evaluate energy sources of

			ecological system. 4. Assess the adaptation of plants in relation to light, temperature, water, wind and fire.
	IX	Practical based on Taxonomy of Angiosperms	1. Practically Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium. 2. Preparation of Herbaria . 3. Practically Assess terms and concepts related to Phylogenetic Systematics. 4. Generalize the characters of the families according to Bentham and Hooker
	X	Practical based on Plant Ecology	1. Understand core concepts of biotic and abiotic Classify the soils on the basis of physical, chemical and biological components. 2. Analysis the phytogeography or phytogeographical division of India. 3. Evaluate energy sources of ecological system.
	Semester-IV		
	XI	Gymnosperms and Utilization of plants	1. Develop critical understanding on morphology, anatomy and reproduction of Gymnosperm. 2. Understanding of gymnosperm plant evolution and their transition to land habitat. 3. Understand core concepts of Economic Botany and relate with environment, populations, communities, and ecosystems. 4. Develop critical understanding on the evolution of concept of organization of apex new crops/varieties, importance of germplasm diversity, issues related to access and ownership. 5. Develop a basic knowledge of taxonomic diversity and important families of useful plants. 6. Increase the awareness and appreciation of plants & plant products encountered in everyday life. 7. Appreciate the diversity of plants and the plant products in human use.

	XII	Plant Physiology	1. Understand Water relation of plants with respect to various physiological processes. 2. Explain chemical properties and deficiency symptoms in plants. 3. Classify aerobic and anaerobic respiration. 4. Explain the significance of Photosynthesis and respiration. 5. Assess dormancy and germination in plants.
	XIII	Practical based on Gymnosperms and Utilization of plants	1. Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Gymnosperm. 2. Develop a basic practical knowledge of taxonomic diversity and important families of useful plants. 3. Increase the practical awareness and appreciation of plants & plant products encountered in everyday life.
	XIV	Practical based on Plant Physiology	1. Practical understand Water relation of plants with respect to various physiological processes. 2. Explain chemical properties and deficiency symptoms in plants. 3. Practical explanation aerobic and anaerobic respiration. 4. Explain the practical significance of Photosynthesis and respiration.
	Semester-V		
	XV	Cell Biology and Molecular Biology	1. Study the prokaryotic and eukaryotic cell. 2. To study different cell organell 3. Analyse the structures and chemical properties of DNA and RNA . 4. Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes leading to genetic disorders. 5. Develop critical understanding of chemical basis of genes and their interactions at population and evolutionary levels. 6. Analyze the effect of mutations on gene functions and dosage. 7. Examine the structure, function and replication of DNA.
	XVI	Diversity of	1. Classify Plant systematics and

		Angiosperms - I	recognize the importance of herbarium and Virtual herbarium. 2. Evaluate the Important herbaria and botanical gardens. 3. Assess terms and concepts related to Phylogenetic Systematics. 4. Generalize the characters of the families according to Bentham & Hooker's system of classification
	XVII	Practical based on Cell Biology and Molecular Biology	1. Examine rhe structure of cell and cell organelle 2. Analyze the structures and chemical properties of DNA and RNA . 3. Examine the structure, function and replication of DNA.
	XVIII	Practical based on Diversity of Angiosperms - I	1. Practically Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium. 2. Preparation of Herbaria. 3. Practically Assess terms and concepts related to Phylogenetic Systematics. 4. Generalize the characters of the families according to Bentham and Hooker
	Semester-VI		
	XIX	Genetics and Biotechnology	1. Have conceptual understanding of laws of inheritance, genetic basis of loci and alleles and their linkage. 2. Understand the core concepts and fundamentals of plant biotechnology and genetic engineering 3. Have conceptual understanding of laws of inheritance, genetic basis of loci and alleles and their linkage. 4. Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes leading to genetic disorders. 5. Develop critical understanding of chemical basis of genes and their interactions at population and evolutionary levels. 6. Analyze the effect of mutations on gene functions and dosage.
	XX	Diversity of Angiosperms - II	1. Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium.

			2. Assess terms and concepts related to Phylogenetic Systematics.
	XXI	Practical based on Genetics and Biotechnology	1. Examine the structure, function and replication of DNA. 2. Develop practical understanding of chemical basis of genes and their interactions at population and evolutionary levels.
	XXii	Practical based on Diversity of Angiosperms - II	1. Practically Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium. 2. Preparation of Herbaria. 3. Practically Assess terms and concepts related to Phylogenetic Systematics. 4. Generalize the characters of the families according to Bentham and Hooker

Department of Zoology

Programme Outcome

Zoology is an undergraduate (B.Sc.) programme for students as a Bachelor of Science degree. After completing and graduating with a degree in Zoology, the students have a wide scope in different fields. Apart from perusing for higher studies (master in the subject with specialization in different branches in Zoology), the students can also opt from a variety of related branches of science:

- Related paramedical fields such as health sciences.
- Agricultural sciences and Master in Forestry
- Master in Food technology and Processing
- Wildlife officers
- Marine Biologist
- Professional field such as Fisheries, Poultry, Sericulture, apiculture, Dairy technology etc.,

Programs offered: B.Sc. Zoology

Sr. No.	Program	Program Objective	Program Specific Outcomes
1	B.Sc. Zoology	PO1. Impart basic knowledge of various branches of Zoology and general biology PO2. Inculcate interest in and love of nature with its myriad living creatures PO3. Understand the unity of life with the rich diversity of organisms and their ecological and evolutionary significance PO4. Acquire basic skills in the observation and study of nature, biological techniques,	PSO1.To provides knowledge about various animal sciences fromprimitive to highly evolved animal groups. PSO2.To highlights the potential of various branches to become an entrepreneur. PSO3.To equipthe students with skills related as well as fieldbased studies. PSO54.To makes the students aware about conservation and sustainable use ofBiodiversity.

		experimental skills and scientific investigation PO5. Acquire basic knowledge and skills in applied subject fishery science to enable them for self employment PO6. Impart awareness of the conservation of the biosphere PO7. Inspire the students forpursuing higher studies in Zoology subject.	PSO5. To address the socio-economical challenges related to animal sciences. PSO6. To facilitate students for taking up and shaping a successful career inZoology. PSO7.To makes the students aware of applications of Zoology subject in various Industries. PSO8.To inculcates interest and foundation for further studies in Zoology.

Courses offered: B.Sc. Zoology

Sr. No.	Course	Courses outcomes
1	**F.Y. B.Sc. Zoology** **I–Semester** Paper I-Protozoa to Annelida Paper II- Cell Biology Paper III- Practical based upon paper I & II **II – Semester** Paper IV- Arthropoda to Echinodermata and Protochordata Paper V- Genetics – I Paper VI- Practical based upon Paper IV & V	**CO1.** The First semester students are able to get conceptual knowledge about general characteristics and classification of invertebrates (Protozoa to Annelida).Besides classification, students get an insight about their selected adaptations, biology and associations in relation to their environment.To strengthen the knowledge gained in theory paper.The practical paper based on theory paper deals with identification of preserved specimens belonging to various invertebrate phyla. **CO2.** The first semester students are well informed with detail studies of the cell biology. The students become competent in gathering information about various aspects of cell division, cell cycle, various cell organelles structure, biology and their function, cancer biology etc. In the practical course the students are able to experimentation skills, charts observation, micro technique studies etc. **CO3.**The second semester students are able to get conceptual knowledge about general characteristics and classification of invertebrates (Arthropoda to Echinodermata) and Vertebrate (Protochordata).Besides classification, students get an insight about their selected adaptations, biology and associations in relation to their environment.To strengthen the knowledge gained in theory paper. The practical paper deals with identification of preserved specimens belonging to various invertebrate and vertebrate phyla. In addition, they study the life history stages of couple of parasites belonging to invertebrate phyla.

		CO4. The students are well informed with detail studies of the genetics- I.The students become competent in gathering information about various aspects of genetics including Mendelian genetics and its extension, linkage and crossing over, mutation and sex determination.The practical course the students are equipped with skills.
2	**S.Y. B.Sc. Zoology III and IV Semester** **III–Semester** Paper VII-Vertebrate Zoology Paper VIII- Genetics - II Paper IX- Practical based upon paper VII Paper X- Practical based upon paper VIII **IV – Semester** Paper XI- Animal Physiology (Special Emphasis on Mammals) Paper XII- Biochemistry and Endocrinology Paper XIII- Practical based upon Paper XI Paper XIV- Practical based upon Paper XII	**CO1.**This semester deals with the important aspects in Zoological studies as vertebrate zoology where the students imbibe knowledge about different physiological systems and their anatomical comparison between higher vertebrate groups. These include Integumentary system, Skeletal system, digestive system, respiratory system, circulatory system, urino-genital system, nervous system and sense organs.The practical paper deals with identification of preserved specimens belonging to various vertebratesanimals and laboratory experiment. **CO2.** The third semester deals with the studies of Genetics-II the students learning about chromosomal aberrations and related diseases such as Down syndrome, Turner Syndrome, Kline- filter syndrome and thalassemia as well as gene expression, Genetic engineering and mutation etc. The practical course the students are equipped with survey of common mutants and experimentation skills. **CO3.** Fourth semester deal with study of Animal physiology where students gain conceptual knowledge about physiological mechanisms and functions of vital processes of different animals such as Nerve physiology, Digestion Respiration, Excretion,Muscle physiology, Reproductive physiology. The practical paper deals with studies of laboratory experiments based on theory paper of Animal Physiology like O_2 consumption of fish, Nitrogenous waste products of animals, % of hemoglobin, haematin crystals, RBC/WBC etc. **CO4.** Fourth semester deal with study of Biochemistry and Endocrinology where students acquire knowledge about biochemical pathways of different metabolic processes including glycolysis and its regulation; citric acid cycle; phosphate pentose pathway, gluconeogenesis, glycogenolysis and glycogenesis, beta oxidation and omega-oxidation and catabolism of amino acid and electron transport system and Endocrine glands structures and functions.The practical course the students are equipped with skills of detection organic of compounds, experimentation methods etc.
3	**T.Y. B.Sc. Zoology V and VI Semester** **V–Semester** Paper XV - Ecology Paper XVI- **Electives**	**CO1.**Fifth semester deal with study of Ecological aspects students learn about basic concept and terminology of abiotic and biotic environmental factors, population, community and different ecosystems of environment .The practical course the students are equipped with skills of experiments of water and soil, population density, histological slides and project report on ecosystem

	Fishery Science -I Paper XVII- Practical based upon paper XV Paper XVIII- Practical based upon paper XVI **IV – Semester** Paper XIX - Evolution Paper XX- **Electives Fishery Science -II** Paper XXI- Practical based upon paper XIX Paper XXII- Practical based upon paper XX	**CO2.**Fifth semester deal with study of specialization of skill based subject Fishery Science-I, students learn about use of various technical skills in capture fisheries of India. The detail pursuing by students like freshwater, marine, brakishwater capture fisheries, riverine and reservoir capture fisheries, application of remote sensing technique in pelagic fisheries, effect of aquatic pollution on fisheries etc. the practical paper deals with the study of museum specimens with their classification, identification, and characteristic of fishes, water analysis of physicochemical parameters and students are visit to local fish seed production centre and prepared project report on it. **CO3.**Sixth semester deal with study of Evolutionary aspects students can learn about use of various technical skills in the Zoology subject. The students acquire knowledge about origin of life and its evolution. Various theories (Lamarckism, Darwinism and Neo-Darwinism) are discussed to review the concept of evolution. They also gain in depth knowledge about Natural Selection, Speciation, Macro evolutionary principles, Biological species concept and Extinction as well as concept of organic evolution, fossolism. The practical course the students are equipped with skills about evidences, adaptive modification, successive stages of evolution. **CO4.** Sixth semester deal with study of fishery Science –II besides the students are informed in applied or skill field of Zoology such as Fisheries, Apiculture, Sericulture, Computer application, Biotechnology, Entomology, Helminthology, Dairy Science, Poultry Science and Protozoology etc. The students acquire knowledge about culture fishery and fish technology through fish culturable techniques as traditional and modern, fish breeding technique, fish diseases, with technology adopted in fisheries such as crafts and gears, fish processing and preservation methods.The practical paper deals with the study of museum specimens with their classification, identification, culturable significance of fishes, primary productivity of ponds, identification of crafts and gears, hypophysation technique, fish parasites and worms identification etc.

Department of Physics

2018-2019

B. Sc. F. Y.

Semester I :

Paper I : (Mechanics, Properties of matter and sound)

Topic 1 : Mechanics

- Student study compound Pendulum(Keter's Pendulum) its periodic time, center of gravity.
- Student study Newton's law of Gravitation, Gravitational field, Gravitational potential of mass etc.
- Study of Gravitational field and potential due to sperical sheal, solid sphere etc.

Topic 2: Elasticity :

- Student study Elastic constants.
- Student study Twisting couple of a cylinder.
- Experimental study of bending moment of beam.
- Student understand bending moment of cantilever loaded at free end when weight of the beam is effective and ineffective.

Topic 3: Viscosity and surface Tension :

- Introduction to energy of liquid in motation.
- Bernoulli's thermo and its application such as law of hydrostatics, filter pump etc.
- Surface tesion Introduction.
- Difference of pressure across a curved surface,
- Determination of S.T. by Jaeger's method

Topic 4 : Ultasonic and Acoustics:

- Introduction to Ultrasonic.
- Piezo – electric effect.
- Piezo – electric Generator to produce ultrasonic,
- Magnetostriction effect and Magnetostriction oscillator.
- Applications of ultrasonic – to measure Depth of sea, Chemical effects, Medical applications.
- Introduction to Acoustics,
- Reverberation and Acoustical demands of an auditorium.
- Sabine's Law – Derivation of Reverberation time.
- Conditions of good acoustical designs of room.

Paper II : Heat and Thermodynamics

Topic 1: Thermal Conductivity :

- Basic Ideas of Transference of heat, Coefficient of thermal conductivity, Rectilinear flow of heat along a metal bar.
- Methods of radial flow of heat-(i)spherical shell method and (ii)Flow of heat along the wall of a cylindrical tube.

- Comparison of conductivities of different metals.

Topic 2 : Real Gases and Transport Phenomena:

- Introduction to Real Gases.
- Reason for modification of gas equation.
- Van der Waals equation and its constants.
- Methods of radial flow of heat-(i)spherical shell method and (ii)Flow of heat along the wall of a cylindrical tube.
- Comparison of conductivities of different metals.
- Transport phenomena–Introduction.
- Mean free path, sphere of influence, and expression for mean free path, variation of mean free path with temperature and pressure.
- transport phenomena, viscosity, Thermal conductivity (their interrelationship, dependence on temperature and pressure).

Topic 3 : Thermodynamics:

- Adiabatic process, Adiabatic equation of a perfect gas.
- Isothermal process, Indicator diagram.
- Work done during isothermal process and adiabatic process, reversible and irreversible process.
- Statement and expression of Second law of thermodynamics. (Kelvin and Clausius statement).
- Introduction to Heat engines, Carnot's ideal work done and Efficiency.
- Van der Waals equation and its constants.

Topic 4 : Entropy and Thermodynamic relations**:**

- General notation of entropy.
- Change of entropy is independent of path.
- Change of entropy in reversible and irreversible process.
- Formulation of second law in terms of entropy.
- Maxwell's thermodynamical relations and its Applications of Maxwell's relations –i) Clausius – Clapeyron equation , ii) T-ds equations

Paper II : Practical

- Student determine acceleration due to gravity by Kater's pendulum.
- Student calculate Y by bending of a beam loaded at center.
- Student determine Y by Cantilever (Oscillation method)
- Student calculate η by Maxwell's needle.
- Student determine M.I. by bifilar suspension.
-
- Student determine of Y and η of the material of a flat spiral spring.
- Student calculate surface tension by Jaeger's method.
- Student determine of coefficient of viscosity by Poisseuille's method

Semester II

Paper IV : (Geometrical and Physical optics)

Topic 1 : Geometrical Optics and Optical Instruments

- Introduction to Cardinal points of optical system - Focal points, Principal points, Nodal points and corresponding planes, coaxial lens system - equivalent focal length and cardinal points.
- Huygens's Eyepiece, Ramsden's eyepiece and their cardinal points.

Topic 2 : Interference

- Understand Cardinal points of optical system - Focal points, Principal points, Nodal points Interference in thin film due to reflected and transmitted light, wedge shaped thin film.
- Apply the concepts to Newton's rings by reflected light, determination of wavelength.
- Develop the concpt of Michelson's Interferometer, type of fringes, determination of wavelength and difference in wavelength.
- Understand Huygens's Eyepiece, Ramsden's eyepiece and their cardinal points.

Topic 3 : Diffraction

- Understand Diffraction at a thin wire,
- Understand what is Fraunhofer diffraction at double slit (Interference and diffraction maxima, minima), Plane Transmission diffraction grating.
- Develop how to determine wavelength (Normal incidence).
- Therotically determine Resolving power of optical instruments (Rayleigh's criterion),
- Understand R. P. of prism and grating.

Topic 4 : Polarization

- Understand Malus law, Double refraction, Huygens's theory of double refraction in uniaxial crystal, Nicol prism.
- Understand Optical activity, Fresnel's theory of optical rotation, specific Rotation, Laurentz's half – shade
- Study what is polarimeter to Determination of specific rotation of sugar solution.

Paper V : (Electricity and Magnetism)

Topic 1 : Vector Algebra

- Appication of Dot and cross product (Revision), scalar triple product and it's geometrical interpretation, vector triple product
- Understand gradient of a scalar and it's physical interpretation.
- Understand Divergence and curl of vector function and their physical interpretation.
- Understand line, surface and volume integrals.
- Apply Gauss's divergence theorem and Stoke's theorem

Topic 2 : Electrostatics

- Student Study Coulomb's Law, Electric field, field due to point charge, flux of electric field.
- Understand Gauss's law, Differential from of Gauss law, electric potential , potential due to a point charge, Potential and field due to electric dipole.
- Student study Dielectrics, polarization of dielectric, Gauss's law in dielectrics, Relation between **D**, **E** and **P.**

Topic 3 : Magnetostatics

- Student develpoe their concept of Magnetic field, Magnetic induction, magnetic flux,

- Student study Biot-Savart law.
- Student apply magnetostatics to determine Magnetic induction due to straight conductor carrying current , magnetic induction on the axis of solenoid.
- Understand Ampere's Law,
- Student study and apply Differential form Ampere's Law, Moving coil ballistic Galvanometer - expression for charge.

Topic 4 : Transient Currents

- Student develpoe their concept of Growth and decay of current in a circuit containing L and R.
- Understand charge and discharge of a capacitor through resistor,
- Understand Growth and decay of charge in LCR circuit Magnetic field, Magnetic induction, magnetic flux,

Paper VI: Practical

- Calculate Y by Searle's apparatus.
- Determine M.I. of fly wheel.
- Study Thermal conductivity of bad conductor by Lee's disc method.
- Study of CRO to Measurement of frequency and voltage sensitivity AC/DC.
- Study of Field along axis of circular coil.
- Study of I□H curve.
- Understand Calibration of spectrometer.
- Calculate Dispersive power of prism.

B. Sc. S. Y.

Semester III

Paper VII : Mathematical, Statistical Physics and Relativity

Topic 1 : Differentiation and ordinary differential equation

- Understand mathematical concepts of Limit of function, partial differentiation, successive differentiation, total differentiation, exact differentiation, chain rule.
- Understand mathematical concepts of Ordinary differential equation, order and degree of differential equation,
- Apply mathematical concept to solution of first order differential equation, and solution of second order linear differential equation with constant coefficient
- Understand Homogeneous equations, b) Inhomogeneous equation,
- Study Special case of exponential right hand to find P.I.Student develpoe their concept of Magnetic field, Magnetic induction, magnetic flux,

Topic 2 : Statistical basis and classical statistics

- Student understand probability, principle of equal a priori probability, probability and frequency, some basis rules of probability theory, permutation and combination,
- Understand macrostates and microstates, phase space, thermodynamic probability, division of compartments into cells.
- Understand and apply Maxwell-Boltzmann energy distribution law, evaluation of gi, α and β.
- Understand M.B. distribution function for ideal gas, M.B. Speed distribution law.

Topic 3 : Quantum statics

- Student understand Need of quantum statistics.
- Understand Bose-Einstein distribution law, Planck's radiation law, Fermi-Dirac distribution law, electron gas, Fermi level and Fermi energy,
- Understand EFO for electrons in a metal, comparison of three static, difference between classical and quantum statistics.

Topic 4 : Theory of relativity:

- Introduction, frame of reference,
- Understand Galilean transformation equations.
- Understand theory of Michelson Morley experiment.
- Student study special theory of relativity, Lorentz transformation equation, length contraction, time dilation, addition of velocities, variation of mass-energy equivalence.

Paper VIII : Modern and Nuclear Physics

Topic 1 : Photoelectric Effect:

- Student study therotically to determine Lenard's method to determine e/m for photoelectrons,
- Student study Richardson and Compton experiment, Relation between photoelectric current and retarding potential,
- Study Relation between velocity of photoelectrons and frequency of light,
- Understand Photoelectric cells-Photo- emissive cell
- Student study Photo- voltaic cell, Photoconductive cell.
- Student study Applications of photoelectric cells.

Topic 2 : X-rays:

- Understand the absorption of X-ray's.
- Study Laue's experiment, Bragg's Law,
- Study application od X-ray to Bragg's X-ray spectrometer, powder crystal method, The Laue method, X-ray spectra, Main features of continuous X-ray spectrum,
- Student study of characteristics x-ray spectrum.

Topic 3 : Nuclear forces and models:

- Understand the basic concepts Binding energy, Nuclear stability, Nuclear forces , Meson theory of nuclear forces.
- Seperimental study of liquid drop model, shell model.
- Understand Energy released in Fission , Chain reaction, Atom bomb, Nuclear Reactors, Nuclear fusion, Source of stellar energy.

Topic 4 : Particle Accelerators and Detectors:

- Understand Linear accelerator, Cyclotron, Synchrocyclotron, Betatron, Ionisation chamber, proportional counter, Geiger – Muller counter.

Paper IX: Practical

- Calculate 'h' by Photo cell
- Determine e/m by Thomson's tube method.
- Student Determine absolute value of BH and BV using Earth Inductor
- Calculate Stefan's constant by using thermo couple
- Student do Measurement of low resistance using potentiometer.
- Determine the Frequency of A.C. mains using sonometer.
- Study of specific rotation by Laurent's half shade polarimeter.
- Student calculate Cauchy's constant by spectrometer

Paper X: Practical

- Student determine thermal conductivity of rubber tube.
- Study of temperature dependence of total radiation.
- Student draw the histogram of theoretical Gaussian curve.
- Student do the comparison of capacities by Desauty's method.
- Student calculate velocity of sound using Helmholtz resonator.
- Student determine surface tension by Ferguson's method.
- Cstudent calculate R. P. of Telescope/microscope.
- Student determine of Wavelength of light by Newton's ring.

Semester IV

Paper XI : General Electronics

Topic 1 : Semiconductor

- Understand Construction, Working and Characteristics of semiconductor diode, Zener Diode.
- Student study Zener diode characteristics.
- Understand Transistor PNP and NPN.
- Student study Transistors characteristics in CE, CB and CC.
- Understand construction, Working
- Student study characteristics of FET & MOSFET.

Topic 2 : Transistor Biasing and Amplifiers

- Student study different tyoes of transistor biasing.
- Student understand selection of operating point, bias stability, transistor biasing circuits -fixed bias or base bias, collector feedback bias, emitter feedback bias or self-bias.
- Student study single stage transistor amplifier, frequency response of RC coupled amplifier, Noise in amplifiers, feedback in amplifiers.
- Understand Op-Amp characteristics, inverting & non-inverting amplifier.
- Understand Op-Amp as an adder and subtractor.

Topic 3 : Oscillators and Multivibrators

- Understand two port network representation of a transistor.
- Study of Hybrid parameters or h – parameters,
- Student study Positive feedback, Basic principle of Oscillators, requirements of feedback, RC Oscillator (Phase shift Oscillator), LC Oscillator (Hartley Oscillator) Transistorised.
- Student study Astable multivibrator, monostable multivibrator, bistable Multivibrator.

Topic 4: Modulation and demodulation

- Student Understand Modulation, Amplitude modulation, Modulation index, frequency modulation, phase modulation, demodulation, advantages of frequency modulation over amplitude modulation.

Paper XII : Solid State Physics

Topic 1 : Crystal Structure

- Syudent understand Crystal lattice- plane lattice, space lattice, translation vectors, Unit cell, (primitive, non primitive Wigner-Sietz primitive cell) Basis, symmetry operations, point groups and space groups, type of lattices (two dimensional and three dimensional lattices), lattice directions and planes.

- Student understand Miller indices, Inter planer spacing, simple cryst structure.

Topic 2 : Bonding and Band theory of solids

- Understand concept of inters–atomic forces, cohesive energy and types of bonding, primary bonds- (ionic bonds, covalent bond and metallic bond), secondary bonds- (Vander Walls bonds and hydrogen bonds).
- Student study the Kroning-Penney model, Energy versus Wave vector relationship, different representations (Brillouin zone)

Topic 3 : Thermal properties of solids

- Student understand classical theory of lattice heat capacity (Concept and comparison with experimentalvalues),
- Student understand Einstein's theory of lattice heat capacity, Debye's model of lattice heat capacity, density of modes, limitations of Debye's model.

Topic 4 : Free electron theory of metals and Transport properties

- Student study Drude-Lorentz's classical theory, electrical conductivity, thermal conductivity,
- Understand Wiedemann Franz law, significance of Fermi energy level.
- Understand Hall effect, Hall voltage and Hall coefficient, experimental determination of Hall coefficient, Importance of Hall effect.Student.

Paper-XIII Practical

- Student calculate Energy band gap of semiconductor using thermister.
- Student plote I.V. Characteristics of solar cell.
- Student calibrate bridge wire using Carry-Foster's bridge.
- Student Determinate absolute capacity of condenser using B.G.
- Student study Full wave rectifier with ∏ filter.
- Student calculate viscosity of liquid using Searle's viscometer.
- Student determine high resistance by leakage through condenser.
- Student calculate viscosity of liquid by oscillating disc method.

- **Paper-XIII Practical**

- Student study Transistor characteristics in CE configuration.
- Student study Transistor characteristics in CB configuration
- Student study CE amplifier
- Student study Hartly Oscillator using transistor.
- Student study Wien Bridge Oscillator using transistor/ Op-Amp
- Student study Op-Amp as adder/substractor
- Student study JFET characteristics. (rp, gm and μ)
- Student study Self-inductance by Owen's Bridge

Semester V

Paper XV : Classical and Quantum Mechanics

Topic 1 : Classical Mechanics

- Student understand Mechanics of Particle, Mechanics of system of particles.
- Student understand Constraints, Classification of Constraints.
- Understand Virtual Work, D'Alembert's principle.
- Student study Lagrange's equation,

- Understand Simple application of Lagrangian formulation –Simple Pendulum, Particle in space, Linear Harmonic Oscillator, Atwood's Machine.

Topic 2 : Origin of Quantum theory

- Student understand why Failure of Classical mechanics, Black body Radiation (Distribution of Energy).
- Understand Plank's Quantum theory-Plank's Quantum postulates.
- Student understand linear momentum of photon in terms of wave vector, Plank's radiation law-Wein's law and Rayleigh's law.
- Student understand Einstein's equation: Quantum theory of photoelectric effect,
- Understand Quantum effect.

Topic 3 : Wave Particle duality

- Student understand de-Broglie's hypothesis for matter waves, de-Broglie's wavelength in terms of energy and temperature, de-Broglie phase velocity and particle velocity (relation between them).
- Student understand Group velocity, Relation between group velocity and phase velocity.
- Student understand Davisson-Germer Experiment, Heisenberg uncertainty principle,
- Student study Applications of Heisenberg uncertainty principle (1) Nonexistence of electrons in nucleus (2) Binding energy of an electron in an atom.).

Topic 4 : The Schrodinger Equation and its applications

- Study of Wave Function (Ψ) of a moving particle.
- Study of Time dependent Schrodinger's wave equation, Expectation value, Operators.
- Student study Time independent Schrodinger equation (steady state form), particle in one dimensional box, Quantization of energy and momentum.

Paper XVI : Electrodynamics

Topic 1 : Electrostatics

- Student understand Electric field lines , electric flux and Gauss law.
- Understand the divergence of E, Curl of E.
- Student study Application of Gauss law: i) Electric field due to a uniform charged sphere ii) Electric field due to charged cylinder, Gaussian pillbox, Poisson's equation, Laplace's equation, Uniqueness theorem (First and Second)

Topic 2 : Time varying field

- Student understand Faraday's Law of Electromagnetic induction, Lenz's law, Self-Induction, Mutual.
- Student understand equation of continuity, Maxwell's displacement current, Maxwell's equation (Derivation, Differential form).

Topic 3 : Electromagnetic waves III

- Student understand Origin of electromagnetic waves, characteristics of electromagnetic wave,
- Student study electromagnetic wave equations in a conducting medium, transverse nature of electromagnetic wave, plane polarized electromagnetic wave.
- Student understand Poynting Vector, Poynting theorem, Polarization of Electromagnetic waves.

Topic 4 : Interaction of Electromagnetic waves with matter

- Student understand Boundary condition for the electromagnetic field vector –**B,E,D and H** at the interface between the two media, reflection and refraction at the boundary of two non conducting media.

Paper-XVII Practical

- Student calculate Thermal conductivity by Forb's method
- Student calculate Rydberg constant

- Student plote B-H curve using magnetometer
- Student determine Debye's temperature (e.g. Tin)
- Student determine of dielectric constant of liquid/solid
- Student measure Resistance of semiconductor by Vaders Pau's method
- Student plote I-H Curve by Excel
- Student plote Rydberg constant Excel

Paper-XVIII Practical

- Student determine Temperature coefficient of resistance of semiconductor
- Student determine Measurement of thickness of thin film by gravimeter/optical/electrical method
- Student determine Temperature of sodium flame
- Student study Hartmann's dispersion formula using spectrometer
- Student use Maxwell's bridge (measurement of inductance using impedance at different frequency)
- Student determine λ by grating (normal incidence)
- Student study Transistorized Regulated power supply using Zener diode.
- Student study Bridge Rectifier.

Semester VI

Paper XIX : Atomic, Molecular Physics and LASER

Topic 1 : The Atom model

- Student understand Thomson atom model, the Rutherford nuclear atom model, drawbacks of Rutherford atomic model.
- Student understand Bohr's atom model, Bohr's theory of origin of spectral lines, diagrammatic representation of the series spectrum of the H-atom in the light of Bohr's theory.

Topic 2 : Vector Atom Model

- Student understand vector atom model.
- Student understand Quantum numbers associated with the vector atom model, L-S coupling, j-j coupling.
- Student study The Pauli's exclusion principle. Selection rules, Intensity Rules, Interval Rule
- Student study Normal Zeeman effect, Anomalous Zeeman effect, Stark effect and its experimental study.

Topic 3: Molecular spectra

- Understand origin of pure rotational spectrum of a molecule.
- Student understand origin of vibrationrotation spectrum of a molecule, Rayleigh's law of scattering.
- Student understand Raman effect- Discovery, experimental study, Applications of Raman effect-molecular structure,
- Understand Nature of liquids, Crystal Physics, Nuclear Physics, Chemical effects.

- **Topic 4: LASER**
  - Student understand induced absorption, spontaneous emission, stimulated emission, population inversion, properties of laser beam, laser pumping,
  - Study of Types of laser-Ruby laser, He-Ne laser, carbon dioxide (CO2) laser, Applications of laser-Biological, medical and industrial.

Paper XX : Non-conventional energy sources and Optical fiber

Topic 1 : Non-conventional energy sources

- Understand Biomass, wind energy, tidal energy/Ocean energy, geothermal energy, biogas hydro energy, wind energy, solar energy Biogas plant-fixed dome type
- Student understand Wind energy, terms and definition: wind, wind farm, wind turbine, vertical axis wind turbine (VAWT), horizontal axis wind turbine (HAWT), propeller (wheel), wind mill,types of wind turbines generator units, monoblade HAWT, twin blade HAWT, merits and limitation of wind energy.

Topic 2 : Solar Photovoltaic Systems

- Student understand photovoltaic systems.
- Student study Solar Cell fundamentals: i) Semiconductor, ii) P-N junction, iii) Generation of electron-hole pair by photon absorption, iv) I_V characteristics of solar cell
- Student study Electrical storage Lead acid battery, basic battery theory.

Topic 3 : Introduction of optical fiber

- Student study importance of optical fiber, classification of optical fiber- stepped index fiber, stepped index monomode fiber, Disadvantages of monomode fiber, plastic fiber, latest developed.
- Understand types of optical fibers- HPSUV; HPSIR; Halide;Tapered.

Topic 4 : Fiber cables and fabrication

- Student study Fiber fabrication: Classification of fiber fabrication techniques; external chemical vapour deposition (external CVD), axial vapour deposition (AVD), internal chemical vapour deposition (internal CVD)
- Studebt study Fiber Cables: Construction, Strength members, cable tensile loading, minimum bend radius losses incurred during installation of cables or during subscriber service testing of cable, selection criteria, optical cable fiber laying in telephone.

Paper-XXI : Practical

- Student Measure the focal length of a given convex lens using laser
- Student study Spectral response of photoconductor (LDR)
- Student study Diffraction of grating using laser beam
- Student study thermocouple (Fe-Cu) and to find inversion temperature
- Student study Refractive Index R.I. of Optical fiber
- Student determine constant of B.G. by standard condenser method
- Student study absorption spectra of iodine and determination of its wavelength using grating

Paper-XXII : practical

- Student determine divergence angle of a diode laser
- Student Determine the diameter of a thin wire using laser
- Student study the interference of light using optical fibers
- Student Determine wavelength of He-Ne laser by transmission grating and reflection grating
- Student calculate Y by Koenig's method
- Student study Edser's A pattern
- Student determine e/m by Thomson methods by Excel
- Student determine Surface tension by Ripple's method

Department of Mathematics

Program outcomes, program specific outcomes

Program	Program outcomes	Program Specific Outcomes
BSc Mathematics	1. Inculcate critical thinking to carry out scientific investigation objectively without being baised with preconceived notions. 2.Prepare students for pursuing research or careers in industry in mathematical sciences and allied fields. 3. Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate highest standards of ethical issues in mathematical sciences. 4. Imbibe effective scientific and / or technical communication in both oral and writing. 5. Create awareness to become an enlightened citizen with commitment to deliver ones responsibilities within the scope of bestowed rights and privileges.	1.Develop the problem solving skill and learn various s which helps in developing logical tools and model Used to solve various real life problems. 2. Students can draw three dimensional figure and their equation particularly plane, right line, sphere, cone , cylinder and conicoid. 3. Understand the basic concepts of calculus, differential equations, number theory, numerical analysis, Laplace Integral Transform, Partial Differential equation, Real Analysis, Algebra , Ordinary differential equation. Learn traditional techniques of solving algebraic equations, differential equations which have application in many disciplines. 4. Provide knowledge of a wide range of mathematical techniques and application of mathematical methods / tools in other scientific and engineering domains. **5**: To enable the students to cultivate a mathematical way of thinking i.e. making conjectures, verifying them with further observations, generalizing them, trying to find proofs and making observations. **6** : To enable the students to quantify their experiences in other subjects they study. **7** : To enable the students to learn the basic structures of mathematics through unifying concepts and to motivate these structures through applications. **8** : To enable the students to study mathematics for themselves. **9** :To provide high quality mathematical education at all levels that will be vital for scientific and technological developments.

Course Outcomes Mathematics

Sr .No.	Course	Course Outcomes
1	**B.Sc.FY (Sem-I) MAT-101 Differential Calculus.**	On completion of this course students will be able to : 1. Explain the relation between the derivative of a function as a function and notion of the derivative as slope of tangent line to a function at a point. 2. Compare and contrast ideas of continuity and differentiability. 3. To find the hyperbolic function and inverse hyperbolic functions , Logarithmic differentiation, implicit function. 4. Find the nth Derivative of the function, evaluate its indeterminate form and way to expand a function in series form using Taylors and Maclaurin theorem. 5. Solve the partial derivative of higher order homogeneous function, total differentials and implicit function. 6. Scalar and vector valued point functions, limit and continuity ,directional derivative. 7. Find and interpret the Gradient curl, divergence for a function at a given point.
2	**B.Sc. FY (Sem-I) MAT-102 Differential Equation.**	On completion of this course students will be able to : 1.The main aim of the course is to introduce the student to the technique of solving various problem of engineering and science. 2. Distinguish between linear, non linear, partial and ordinary differential equation. 3 .Solve basic application problem by second order linear differential equation with constant coefficients. 4 . Obtain an appropriate set of solution of homogenous linear equation, equation reducible to homogenous linear form. 5. Find the exact differential equation and equation of particular form. 6 .Ordinary differential equation with more than two variables. 7 .Definition, derivation of partial differential equation by the elimination of constants and arbitrary function.
3	**B.Sc. FY (Sem-II) MAT-201 Integral calculus**	On completion of this course students will be able to : 1.Apply the principal of integral to solve a variety of practical problem in science and engineering. 2. Equip the students with standerd concepts and tools at an intermediate to advanced level that will serve them well towards tackiling more advanced level of mathematics. 3 .Solve the problem of methods of integration ,integration of Algebraic Functions and Trigonometric Functions. 4. Find the Areas of plane Region bounded by a curve. 5. Solve the problem Rectification ,length of plane curve. 6. Interpret Line, surface and volume integrals. 7. Evaluate integrals by using Gauss theorem ,Greens theorem ,Stooks theorem .

4	**B Sc.FY (Sem-II) MAT-202 GEOMETRY.**	On completion of this course students will be able to : 1.Describe the various forms of equation of a plane ,straight line .sphere .cone and cylinder. 2. Find the angle between planes, Bisector planes, perpendicular distance from apoint to a plane,Image of a line on a plane, Intersection of two lines. 3. Define coplanar lines and illustrate. 4. Compute the angle between a line and plane, length of perpendicular from a point to line. 5. Define skew lines. 6. Calculate the shortest distance between two skew lines. 7 . Find the nature of general cone.
5	**B.Sc.SY (Sem-III) MAT-301 Number Theory**	On completion of this unit successful students will be able to: 1. Define and interpret the concepts of divisibility, congruence, greatest common divisor, prime, and prime-factorization. 2. Apply the Law of Quadratic Reciprocity and other methods to classify numbers as primitive roots, quadratic residues, and quadratic non-residues. 3. Prove results involving divisibility and greatest common divisors. 4. Solve systems of linear equations; 5. Find integral solutions to specified linear Diophantine Equations; 6. Apply Euler-Fermat's Theorem to prove relations involving prime numbers; 7. Apply the Wilson's theorem. 8. Polynomial addition, subtraction, division, multiplication, roots of polynomials. 9. Define and interpret the concept of divisibility ,congrunces,gcd divisor ,prime and prime factorization.
6	**B.Sc. SY (Sem -III) MAT-302 Integral Transforms**	On completion of this unit successful students will be able to: 1. Able to understand the Laplace transform of elementary functions. 2. Able to use the rules of integration & definition of Laplace transform students to prove the properties of Laplace transform. 3. Learns the topics inverse Laplace transform, application of Laplace transform helps to solve linear higher order differential equation , system of differential equations. 4. Understand the concept of fourier Series which gives the idea of expanding the sectionally continuous functions in to infinite series.
7	**B.Sc.SY (Sem-III) MAT-303 Mechanics.**	On successful completion of this course unit students will be able to 1. Understand the basic ideas of Forces acting on a partical 2. To find the magnitude and direction of the resultant of any number of coplanar forces acting at a point.

		3. Obtain the trangle law of forces,polygon of forces ,lamis theorem and Trignometric theorem. 4. To find the centroid of weighted points ,center of gravity of some uniforms bodies.
8	**B.Sc. SY (Sem-IV) MAT -401 Numerical Methods**.	On completion of this unit successful students will be able to : 1. Solve an algebraic or transcendental equation using an appropriate numerical method. 2. Define basic concepts of operators 3. Find the difference of polynomial. 4. Solve problems using Newton,Lagranges,Hermite interpolation formula 5. Determine the Least Square curve fitting procedure 6. Solve the linear system of equation using numerical method. 7. Find the solution of ordinary differential equation of first by Eulers,Taylor and Runge –Kutta methods.
9	**B.Sc. S Y (Sem –IV) MAT -402 Partial Differential Equation.**	Upon successful completion of this course, students will be able to: 1. Explain the concepts and language of partial differential equations. 2. Understand the difference between ordinary & partial differential equation 3. Classify the partial differential equations 4.T o find the Lagrange linear partial differential equation. 5. Solve the partial differential equation using charpits method, Jacobis method. 6. Solve the problem of Linear Homogeneous and Non-Homogeneous partial differential equation with constant coeficents. 7. To find the partial differential equation of second order using Monges method.
10	**B.Sc. S Y (Sem –IV) MAT -403 Mechanics.**	Upon successful completion of this course, students will be able to: 1. Definition of velocity and acceleration in terms of vector derivatives. 2. To find the Tangential and normal components of velocity and acceleration. 3. Solve the problem in kinetics of a partical,Newtons Law of motion . 4. Demonstrate their understanding of motion of a projectilel and motion in resting medium. 5. Definitions of Areal velocity in central orbit and find the differential equation of central orbit.
11	**B.Sc. TY (Sem-V) MAT -501 Real Analysis I**	By the end of the course, students will be able to: 1. Discribe the basic difference between the rational and real numbers. 2. Give the definition and concepts related to the sequences of real numbers. 3. Evaluate the limit of wide class of real sequences. 4. Determine whether or not real series are convergent by comparision with standard series bring the ratio test. 5.Understand and perform simple proof of sequence and series of real

		numbers. 6. Students will be able to demonstrate basic knowledge of key topics in real analysis . 7.Demonstrate the knowledge of Jacobian of implicit functions. Necessary and sufficient condition for a Jacobian vanish. 6. Solve the problem of convergent and divergent of sequence and series.
12	**B.Sc. TY (Sem-V) MAT -502 Algebra I**	On completion of this unit successful students will be able to: 1.Assess properties implied by the definitions of groups and rings. 2. Use various canonical types of groups including cyclic groups and groups of permutation and canonical type of rings 3. Determine possible subgroups of a group. 4. Identify normal subgroups of a group. 5. Examine symmetric and permutation groups. 6. Explain group and subgroup orders using Lagrange's theorem. 7. Identify cyclic subgroups and their generators. 8. Identify factor group. 9.Analyse and demonstrate example of ideals and quotient rings . 10.Use of concept of isomorphism and homomorphism for groups and rings 11.provide rigorous proofs of propositions arising in the content of abstract algebra.
13	**B.Sc. TY (Sem-V) MAT -504 Ordinary Differential Equation-I**	On completion of this unit successful students will be able to: 1. Main aim of the course to introduce the students to the techniques of solving varius problem of engineering and science. 2. Distinguish between linear, nonlinear, partial and ordinary differential equations. 3. Recognize and solve a homogeneous differential equation. 4. Find particular solutions to initial value problems. 5. Solve basic application problems described by second order linear differential equations with constant coefficients. 6. Find power series solution about ordinary point and singular points. 7. Find transforms of derivatives and integrals. 8. Obtaine an appropriate set of solution function value to a second order boundary value problem using a finite difference equation. 9. Solve a homogeneous linear equation.
14	**B.Sc. TY (Sem-VI) MAT -601 Real Analysis II**	Upon successful completion of this course, students will be able to 1.Give the definition and concept of metric spaces and limit in metric spaces. 2. Determine whether or not functions continuos on metric spaces. Define open sets and closed sets . 3. determine the given sets are either open sets ,connected sets, bouded sets and totally bounded sets 4. Define compact metric space and check out given function is continuous or uniformly continuous on compact metric space. 5. Define Riemann integral and Riemann sums 6. Prove a theorem about Riemann sums and Riemann integrals

		7. understand the fundamental theorem of calculus.
15	**B.Sc. TY (Sem-VI) MAT -602 Abstrac Algebra-II**	Upon successful completion of this course, students will be able to 1.Define vector space and subspace and study the examples 2. To write precise and accurate mathematical objects in vector spaces. 3. For checking the linearly independence or linearly dependence. 4. To understand the concepts of dual spaces and inner product spaces. 5. To understand the concept of modules and sub modules. 6..Provide rigorous proofs of propositions arising in the content of abstract algebra.
16	**B.Sc. TY (Sem-VI) MAT -604 Ordinary Differential Equation-II**	On completion of this unit successful students will be able to: 1. Main aim of the course to introduce the students to the techniques of solving varius problem of engineering and science. 2. Recognize and solve intial value problem for homogeneous equation. 3.Understand the wronskian method of linearly dependence and independence 4. Find the solutions of non-homogeneous equations. 5. Understand the Legendre equation and Eulers equation. 6 .solve second order equation with regular singular point . 7. Understand the Bessel equation.

Department of Computer Science

1. Programmes offered

Sr. No.	Programme	Program Objectives	ProgrammeSpeific Objectives
1.	B.Sc.Computer Science (Optional)	The syllabus includes basic as well as advanced concepts in the Computer Science from first year to the third year shall inspire the students for pursuing higher studies in Computer Science and for becoming an Self-employed and also enable students to get employed in the Companies.	1. To develop problem solving abilities using a computer. 2.To build the necessary skill set nd analytical abilities for eveloping. 3. Computer based solutions for real lifeproblems. 4. Todevelop quality software practices. 5. To train students in professional skills related to SoftwareIndustry. 6. To prepare necessary knowledge base for research and development in Computer Science. 7. To help students build-up a successful career in Computer Science.

2.	Bachelor of Computer Science B.Sc. (Computer Science)	The syllabus includes basic as well as advanced concepts in the Computer Science from first year to the third year shall inspire the students for pursuing higher studies in Computer Science and for becoming an Self-employed and also enable students to get employed in the Companies.	1. To develop problem solving abilities using a computer. 2. To build the necessary skill set and analytical abilities for developing. 3. Computer based solutions for real lifeproblems. 4. To develop quality software practices. 5. To train students in professional skills related to SoftwareIndustry. 6. To prepare necessary knowledge base for research and development in Computer Science. 7. To help students build-up a successful career in Computer Science.

3.	B.C.A.(Science)	The syllabus includes basic as well as advanced concepts in the Computer Science from first year to the third year shall inspire the students for pursuing higher studies in Computer Science and for becoming an Self-employed and also enable students to get employed in the Companies.	1. To develop problem solving abilities using a computer. 2. To build the necessary skill set and analytical abilities for developing. 3. Computer based solutions for real lifeproblems. 4. To develop quality software practices. 5. To train students in professional skills related to SoftwareIndustry. 6. To prepare necessary knowledge base for research and development in Computer Science. 7. To help students build-up a successful career in Computer Science.

2. Courses offered

Sr. No.	Course	Course Outcomes
1	B.Sc. F.Y.(Optional) CS01 Computer Fundamentals	To impart basic introduction to computer hardware components, computer numbering, how the CPU works, fundamental about algorithms and flowchart as well as different type of software.
2	CS02 Digital Electronics	To impart basic knowledge in digital logic and circuits and to introduce basic concepts of data communications. Student will be able to learn basic concepts of digital logic and the design of basiclogic circuits using commonly used combinational and sequential circuits.
3	CSO3 Office Suite & Digital Electronics	To impart the student hands on practice so that students should be able to: Create, Save, Copy, Delete, Organize various types of files and manage the desk top in general, use a standard word and Spread-sheet processing package exploiting popular features. To provide hands-on practice of the basic knowledge in digital logic and circuits and to provide hands-on practice in some commonly used combinational and sequential circuits
4	CS04 Operating System	To introduce students the basic functioning of operating systems asresource manager and its Salient features. Also to study about process states, scheduling, Memory and I/O Management techniques.
5	CS05 Programming in C	To expose students to algorithmic thinking and problem solving andimpart moderate skills in programming using C Language in a industry-standard. Introduce students to learn basic features,Create, execute simple C programs using conditional statements,loops and arrays.
6	CS06 Operating System & Programming In C	To expose students to algorithmic thinking and problem solving and impart moderate skills in programming using C Language.

Sr. No.	Course	Course Outcomes
1	B.Sc. S.Y.(Optional) CS07Advance Programming in C	To expose students to algorithmic thinking and problem solving and impart moderate skills in programming using C Language in a industry-standard. Introduce students to learn basic features ,Create, execute simple C programs using conditional statements ,loops and arrays.
2	CS08Data Structure	To learn systematic way of problem solving. To understand the different methods of organizing large amount of data. To efficiently implement the different data structures. To efficiently implement solutions for specific problems.
3	CS09 Practical Adv.Programming in C	
4	CS010 Practical Data Structure	
5	CS011 Programming in CPP	To Acquire and understanding of basics object oriented concepts and the issues involved in effective class design. Write C++ programs that use object oriented concepts such as information hiding, constructors, destructors, inheritance etc.
6	CS012 DBMS Using SQL	To learn & Create the database Using SQL, Manipulation of data in Database.
7	CS013 PracticalProgramming in CPP	
8	CS014 Practical DBMS Using SQL	

Sr. No.	Course	Course Outcomes
1	B.Sc.T.Y.(Optional) CSO15Software Engineering	To teach basics of system analysis and design. To teach principles of software engineering. To teach various process models used in practice. To know about the system engineering and requirements engineering. To build analysis model.
2	CSO16 Web Designing	To learn HTML. To understand the different Tags. To efficiently create web documents. To efficiently implement solutions for specific problems.
3	CSO17 Case Study	Case Study on Software engineering.
4	CSO18 Pr. Based on CSO16	
5	CSO19 Data Communication and Networking	This course will prepare students in basic networking concepts. Understand different types of networks various topologies and application of networks. Understands types of addresses data communication. Understand the concepts of networking models protocols functionality of each layer. Learn basic networking hardware and tools.
6	CSO20 E-Commerce	To learn E-Commerce concepts
7	CSO21 Seminar	
8	CSO22 Project	Develop projects.

Sr. No.	Course	Course Outcomes
1	B.Sc. F.Y. (Computer Science) CS101-T Computer Fundamentals	To impart basic introduction to computer hardware components, computer numbering, how the CPU works, fundamental about algorithms and flowchart as well as different type of software.
2	CS102-T Digital Electronics	To impart basic knowledge in digital logic and circuits and to introduce basic concepts of data communications. Student will be able to learn basic concepts of digital logic and the design of basic logic circuits using commonly used combinational and sequential circuits.
3	CS103-T Microprocessor - I	To Understand Microprocessor and Microcomputer & Its Hardware
4	CS104-T C Programming – I	To expose students to algorithmic thinking and problem solving and impart moderate skills in programming using C Language. Introduce students to learn basic features, Create, execute simple C programs using conditional statements, loops and arrays.
5	CS105-T Communication Skill – I	To Develop Communication Skills
6	CS106-T Mathematical Foundation	A student should get a understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
7	CS107-P Office Suite Practical	
8	CS108-P Digital Electronics Practical	
9	CS109-P Microprocessor – I Practical	
10	CS110-P C Programming – I Practical	

Sr. No.	Course	Course Outcomes
1	B.Sc. S.Y. (Computer Science) CS301-T Advance DataStucture	To impart basic introduction to computer hardware components, computer numbering, how the CPU works, fundamental about algorithms and flowchart as well as different type of software.
2	CS302-T UNIX O.S.	To impart basic knowledge in digital logic and circuits and to introduce basic concepts of data communications. Student will be able to learn basic concepts of digital logic and the design of basic logic circuits using commonly used combinational and sequential circuits.
3	CS303-T PC-Maintenance	To Understand Microprocessor and Microcomputer & Its Hardware
4	CS304-T C Programming in CPP	To expose students to algorithmic thinking and problem solving and impart moderate skills in programming using C Language. Introduce students to learn basic features, Create, execute simple C programs using conditional statements, loops and arrays.
5	CS305-T Database Management System	To study Basic Concept, Data Modeling & Design, Entity-Relationship Data Model, Relational Data Model, Relational Algebra.
6	CS306-T Stastical Methods	The syllabus of Statistics course covers basic concepts and terminology in Statistics covers basic tools and methods required for data analysis. A student should get a understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
7	CS307-P Data Structure using CPP Practical	
	CS308-P DBMS Practical	
8	CS309-P PC-Maintenance Practical	
	CS310-P UNIX Practical	

Sr. No.	Course	Course Outcomes
1	B.Sc. T.Y. (Computer Science)CS501-T Software Cost Estimation	To Study Decomposition Techniques, Empirical Estimation Models.
2	CS502-T Basic of Android O. S.	To understand the Android Operating System and develop applications using Google's Android platform.
3	CS503-T Core Java-II	To learn programming using java. Input/Output Stream, Utilities, Applets. To study concept of Core Java.
4	CS504-T Basic of Computer Graphics	To study how graphics objects are representation computer. To study how graphics system in computer supports presentation of graphics information. To study how interaction is handles in a graphics system. To study how to manipulate graphics object by applying different transformations. To provide the programmers perspective of working of computer graphics.
5	CS505-T Beginners Prog. with PHP	To understand PHP: What is PHP? Why PHP? Evolution of PHP.Installation: PHP on windows and Linux, Configuring: Apache &PHP,Running& Testing PHP Script, Combining PHP with HTML.PHP Language Basics: Building blocks of PHP: Variables, Data Types,Operators and Expressions and Constant.Decision within PHP: *if , if.. else, if.. elseif .. else, switch*, Ternary Operator
6	CS508-T Advanced Networking	To StudyOSI Model & basic networking concepts: data Communication, protocols and standards, various topologies and applications of network.
7	CS509-P Pr. Based on Adv. Java Pr. Based on Comp. Graphics	
8	CS510-P Pr. Based on Android O.S. Pr. Based on PHP/ASP.Net	

Sr. No.	Course	Course Outcomes
1	B.C.A. F.Y. (Computer Science) CA101-T Computer Fundamentals	To impart basic introduction to computer hardware components, computer numbering, how the CPU works, fundamental about algorithms and flowchart as well as different type of software.
2	CA102-T Digital Electronics	To impart basic knowledge in digital logic and circuits and to introduce basic concepts of data communications. Student will be able to learn basic concepts of digital logic and the design of basic logic circuits using commonly used combinational and sequential circuits.
3	CA103-T Microprocessor - I	To Understand Microprocessor and Microcomputer & Its Hardware
4	CA104-T C Programming – I	To expose students to algorithmic thinking and problem solving and impart moderate skills in programming using C Language. Introduce students to learn basic features, Create, execute simple C programs using conditional statements, loops and arrays.
5	CA105-T Communication Skill – I	To Develop Communication Skills
6	CA106-T Mathematical Foundation	A student should get a understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
7	CA107-P Office Suite Practical	
8	CA108-P Digital Electronics Practical	
9	CA109-P Microprocessor – I Practical	
10	CA110-P C Programming – I Practical	

Sr. No.	Course	Course Outcomes
1	B.C.A. S.Y. (Computer Science) CA301-T Database Management System	To study Basic Concept, Data Modeling & Design, Entity-Relationship Data Model, Relational Data Model, Relational Algebra.
2	CA302-T Mobile Maintenance-I	To understandBasic Electronic and Microcomponents, Fundamentals of Mobile Phone. To study Human Interface Devices Software for Mobile Repairing
3	CA303-T Principal of Management	To Understand Principles of Management, Function of management: Planning, Organizing, Direction, Controlling.
4	CA304-T C Programming in CPP	To expose students to algorithmic thinking and problem solving and impart moderate skills in programming using C++ Language. Introduce students to learn basic features, Create, execute simple C programs using conditional statements, loops and arrays.
5	CA305-T Personality Development	To Develop Self-Awareness and Self-Motivation, Power of positive thinking, Public Speaking Skills, Interpersonal Skills
6	CA306-T Stastical Methods	The syllabus of Statistics course covers basic concepts and terminology in Statistics covers basic tools and methods required for data analysis. A student should get a understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
7	CA307-P Programming in C++ Practical	
	CA308-P DBMS Practical	
8	CA309-P Mobile Maintenance-IPractical	
	CA310-P Statistical Method using Excel	

Sr. No.	Course	Course Outcomes
1	B.C.A. T.Y. (Computer Science) **CA501-T** Software Project Management –II	To Study Decomposition Techniques, Empirical Estimation Models.
2	CA502-T Computer Graphics-I	To study how graphics objects are representation computer. To study how graphics system in computer supports presentation of graphics information. To study how interaction is handles in a graphics system. To study how to manipulate graphics object by applying different transformations. To provide the programmers perspective of working of computer graphics.
3	CA503-T Core JAVA-II	To learn programming using java. Input/Output Stream, Utilities, Applets.To study concept of Core Java.
4	CA504-T Data Warehouse	To Study Concept of Data Warehousing, Data warehouse Building blocks, Architecture, Multidimensional Data Models, Data Warehousing and the Web.
5	CA506-T Data Communication Networking	To Study OSI Model & basic networking concepts: data Communication, protocols and standards, various topologies and applications of network.
6	CA507-T Beginning with PHP Programming	To understand PHP: What is PHP? Why PHP? Evolution of PHP.Installation: PHP on windows and Linux, Configuring: Apache &PHP,Running& Testing PHP Script, Combining PHP with HTML.PHP Language Basics: Building blocks of PHP: Variables, Data Types,Operators and Expressions and Constant.Decision within PHP: *if , if.. else, if.. elseif .. else, switch*, Ternary Operator
7	CA509-P Pr. Based on Comp.Graphics Pr. Based on Core JAVA-II	
8	CA510-P Pr. Based on DCN Pr. Based on PHP	

Department of Hindi

Course Outcomes

Sr.No.	Programme	Programme Objective	Programme Specific Outcomes
1.	UG Hindi	१.मानवीय संवेदनाओं का विकास करना २.भाषा कौशल्य का विकास करना ३.व्यवहारिक हिंदी की जानकारी से अवगत करना ४.हिंदी भाषा एवं लिपि के विकास से अवगत कराना ५. साहित्यालोचन क्षमता का परिचय ६. अनुसंधानात्मक दृष्टि का विकास	१. मानवीय संवेदनाओं का विकास होता है २. भाषा कौशल्य का विकास किया गया ३. व्यवहारिक हिंदी की जानकारी से अवगत किया ४. हिंदी भाषा एवं लिपि के विकास से अवगत किया ५. साहित्यालोचन क्षमता का विकास किया ६. अनुसंधानात्मक दृष्टि विकसित हुई
2.	B.A.,B.Sc.,B.Com. F.Y. (S.L.) सामान्य हिंदी - I / II	१.मानवीय संवेदनाओं का विकास करना २.भाषा कौशल्य का विकास करना ३.व्यवहारिक हिंदी की जानकारी से अवगत करना ४.हिंदी भाषा एवं लिपि के विकास से अवगत कराना	१. मानवीय संवेदनाओं का विकास होता है २. भाषा कौशल्य का विकास किया गया ३. व्यवहारिक हिंदी की जानकारी से अवगत किया ४. हिंदी भाषा एवं लिपि के विकास से अवगत किया
3	B.A.,B.Sc.S.Y. (S.L.) सामान्य हिंदी - III / VI	१. साहित्य आस्वादन अभिरूचि का परिसंस्कार २. जीवन मूल्यों के प्रति आस्था ३. अत्याधुनिक ईलेक्ट्रॉनिक माध्यमों का परिचय ४. गद्य साहित्य के विविध	१. साहित्य आस्वादन अभिरूचि का परिसंस्कार हुआ २. जीवन मूल्यों के प्रति आस्था निर्माण हुई ३. अत्याधुनिक ईलेक्ट्रॉनिक माध्यमों का परिचय दिया गया

		विधाओं से परिचय	४. गद्य साहित्य के विविध विधाओं से परिचित हुये
4	B.Com.S.Y. (S.L.) संप्रेषणमूलक व्यावसायिक हिंदी - I / II	१. प्रयोजनमूलक भाषा अध्ययन २. वाणिज्य व्यावसाय के भाषा कौशल्य ३. व्यावसायिक लेखन कौशल्य	१. प्रयोजनमूलक भाषा का अध्ययन किया गया २. वाणिज्य व्यावसाय के भाषा कौशल्यों को विकसित किया ३. व्यावसायिक लेखन कौशल्य अवगत किया
5	B.A.F.Y. (Opt.) उपन्यास साहित्य गद्य साहित्य	१. सामान्य आस्वादन और अभिरूचि का परिसंस्कार २. जीवन मूल्यों के प्रति आस्था ३. उपन्यास साहित्य का अध्ययन ४. कहानी तथा व्यंग का अध्ययन ५. लेखन तथा भाषण कौशल्य का विकास	१. सामान्य आस्वादन और अभिरूचि का परिसंस्कार हुआ २. जीवन मूल्यों के प्रति आस्था निर्माण की ३. उपन्यास साहित्य का अध्ययन किया ४. कहानी तथा व्यंग का अध्ययन किया ५. लेखन तथा भाषण कौशल्य का विकास हुआ
6	B.A.F.Y. (Opt.) नाटक साहित्य एकांकी साहित्य	१. हिंदी नाटक तथा रंगमंच का अध्ययन २. हिंदी नाटकों के नए भेदों का अध्ययन ३. मानवीय संवेदनाओं का विकास ४. नाट्यास्वादन तथा नाछ्यालोचन क्षमता का विकास	१. हिंदी नाटक तथा रंगमंच का अध्ययन किया २. हिंदी नाटकों के नए भेदों से परिचित किया ३. मानवीय संवेदनाओं का विकास हुआ ४. नाट्यास्वादन तथा नाट्यालोचन क्षमता का विकास हुआ
7	B.A.S.Y. (Opt.) कथेत्तर गद्य साहित्य आधुनिक हिंदी कविता	१. साहित्य आस्वादन अभिरूचि में वृध्दि २. हिंदी कथेत्तर गद्य संवेदना की परम्परा का परिचय ३. हिंदी पद्य संवेदना की	१. साहित्य आस्वादन अभिरूचि में वृध्दि की २. हिंदी कथेत्तर गद्य संवेदना की परम्परा से आवगत किया ३. हिंदी पद्य संवेदना की परम्परा

		परम्परा का परिचय ४. जीवन मूल्यों के प्रति आस्था	से आवगत किया ४. जीवन मूल्यों के प्रति आस्था निर्माण हुई
8	B.A.S.Y. (Opt.) प्रयोजनमूलक हिंदी	१. हिंदी भाषा के विविध रूपों का परिचय २. राजभाषा हिंदी के विभिन्न पहलुओं का परिचय ३. प्रयोजनमूलक भाषा तथा अनुवाद की भूमिका का परिचय ४. देवनागरी लिपि : उद्‌भव और विकास से परिचित कराना	१. हिंदी भाषा के विविध रूपों से परिचित किया २. राजभाषा हिंदी के विभिन्न पहलुओं से परिचित किया ३. प्रयोजनमूलक भाषा तथा अनुवाद की भूमिका से आवगत किया ४. देवनागरी लिपि : उद्‌भव और विकास से परिचित हुए
9	B.A.T.Y. (Opt.) प्रादेशिक भाषा साहित्य मध्यकालीन काव्य	१. साहित्य आस्वादन अभिरूचि का परिसंस्कार २. जीवन मूल्यों के प्रति आस्था ३. प्रादेशिक साहित्य का ज्ञान ४. भारतीय साहित्य का आध्ययन ५. भारतीय भक्ति आंदोलन का अध्ययन ६. रीतिकालीन संवेदना का अध्ययन ७. कविता के माध्यम से मध्यकालीन सांस्कृतिक संवेदना का अध्ययन	१. साहित्य आस्वादन अभिरूचि का परिसंस्कार किया २. जीवन मूल्यों के प्रति आस्था निर्माण हुई ३. प्रादेशिक साहित्य का ज्ञान दिया ४. भारतीय साहित्य का आध्ययन किया ५. भारतीय भक्ति आंदोलन से अवगत किया ६. रीतिकालीन संवेदना से परिचित किया ७. कविता के माध्यम से मध्यकालीन सांस्कृतिक संवेदना से जोडा
10	B.A.T.Y. (Opt.) आदि तथा मध्यकालीन हिंदी साहित्य का इतिहास आधुनिक हिंदी साहित्य का इतिहास	१. साहित्य आस्वादन अभिरूचि का परिसंस्कार २. जीवन मूल्यों के प्रति आस्था ३. हिंदी साहित्य की परम्परा से परिचय	१. साहित्य आस्वादन अभिरूचि का परिसंस्कार किया २. जीवन मूल्यों के प्रति आस्था निर्माण हुई ३. हिंदी साहित्य की परम्परा से परिचित किया

11	B.A.T.Y. (Opt.) साहित्यशास्त्र	१. साहित्य चिंतन का अध्ययन २. साहित्यालोचन क्षमता का परिचय ३. साहित्य सृजन के संस्कार	साहित्यशास्त्र १. साहित्य चिंतन से आवगत किया २. साहित्यालोचन क्षमता का विकास किया ३. साहित्य सृजन के संस्कार हुए
12	B.A.T.Y. (Opt.) प्रकल्प कार्य	१. पठन लेखन कौशल्य का विकास २. आलोचनात्मक क्षमता का विकास ३. अनुसंधानात्मक दृष्टि का विकास	१. पठन लेखन कौशल्य विकसित किए २. आलोचनात्मक क्षमता निर्माण की ३. अनुसंधानात्मक दृष्टि विकसित हुई

Department of Marathi

Programme Outcomes

Sr.No.	Programme	Programme Objective	Programme Outcomes
1.	UG Marathi	१. भाषिक कौशल्ये विकसित करणे २. मराठी साहित्याविषयी रूची निर्माण करणे ३. जीवन जाणिवा विकसित करणे ४. साहित्य निर्मितीचे कौशल्ये प्राप्त करणे ५.साहित्य प्रकाराची मांडणी आत्मसात करणे ६.भाषेचे स्वरूप व कार्य समजून घेणे	१. भाषिक कौशल्ये विकसित होतात २. मराठी साहित्याविषयी रूची निर्माण होते ३. जीवन जाणिवा विकसित होतात ४. साहित्य निर्मितीचे कौशल्ये प्राप्त केले जाते ५.साहित्य प्रकाराची मांडणी आत्मसात होते ६.भाषेचे स्वरूप व कार्य समजून घेतले जाते
Course Outcomes			
	Course	Course Objective	Course Outcomes
2.	B.A.,B.Sc.,B.Com. F.Y. (S.L.) गद्य पद्य व उपयोजित मराठी	१. गद्याच्या माध्यमातून सामाजिक मूल्य रूजवणे २. तत्कालिन समाजजीवनावर प्रकाश टाकणे ३. भाषिक कौशल्ये आत्मसात करणे ४. पद्याचे स्वरूप समजून घेणे ५. लेखन कौशल्याचा वापर करणे	१. गद्याच्या माध्यमातून सामाजिक मूल्य रूजवले जातात २. तत्कालिन समाजजीवनावर प्रकाश टाकला जातो ३. भाषिक कौशल्ये आत्मसात केली जातात ४. पद्याचे स्वरूप समजून घेतले जाते ५. लेखन कौशल्याचा वापर

			केला जातो
	B.A.,B.Sc.S.Y. (S.L.) गद्य पद्य व उपयोजित मराठी	१. साहित्यातील विविध प्रवाह आणि प्रकार लक्षात आणून देणे २. साहित्याचा आस्वाद घेण्याची क्षमता विकसित करणे ३. प्रसार माध्यमांची ओळख करून देणे ४. माहिती तंत्रज्ञानाचा परिचय करून देणे	१. साहित्यातील विविध प्रवाह आणि प्रकार लक्षात आणून दिले जातात २. साहित्याचा आस्वाद घेण्याची क्षमता विकसित करण्यात येते ३. प्रसार माध्यमांची ओळख करून दिली जाते ४. माहिती तंत्रज्ञानाचा परिचय करून देण्यात येतो
	B.Com.S.Y. (S.L.) वाणिज्य व्यवहार, व्यवसाय आणि मराठी भाषा	१. वाणिज्य व्यवहारासाठी मराठी भाषेचे आकलन करून देणे २. भाषिक कौशल्ये आत्मसात करणे ३. वाचन संस्कृती वृद्धींगत करणे ४. व्यवसायात मराठी भाषेला स्थान मिळवून देणे	१. वाणिज्य व्यवहारासाठी मराठी भाषेचे आकलन करून दिले जाते २. भाषिक कौशल्ये आत्मसात केली जातात ३. वाचन संस्कृती वृद्धींगत होते ४. व्यवसायात मराठी भाषेला स्थान मिळवून दिले जाते
	B.A.F.Y. (Opt.) काव्यात्म साहित्य, कथात्म साहित्य	१. साहित्य प्रकारांची ओळख करून घेणे २. साहित्य प्रकाराच्या पुर्वपिठीकेवर प्रकाश टाकणे ३. निवडक कवींच्या कवितांचा परिचय करून देणे ४. निवडक कथांचा परिचय करून देणे	१. साहित्य प्रकारांची ओळख करून दिली जाते २. साहित्य प्रकाराच्या पुर्वपिठीकेवर प्रकाश टाकला जातो ३. निवडक कवींच्या कवितांचा परिचय करून देण्यात येतो ४. निवडक कथांचा परिचय करून दिला जातो
	B.A.F.Y. (Opt.) नाटयात्म साहित्य, मुद्रित	१. निवडक नाटकांचा परिचय करून देणे	१. निवडक नाटकांचा परिचय करून दिला जातो

	माध्यमांसाठी लेखन कौशल्ये	२. नाटकाच्या परंपरा, प्रेरणांचा शोध घेणे ३. वृत्तपत्रासाठी लेखन कौशल्ये आत्मसात करणे ४. वृत्तपत्राचे स्वरूप समजून घेणे	२. नाटकाच्या परंपरा, प्रेरणांचा शोध घेण्यात येतो ३. वृत्तपत्रासाठी लेखन कौशल्ये आत्मसात केली जातात ४. वृत्तपत्राचे स्वरूप समजून घेतले जात
	B.A.S.Y. (Opt.) आधुनिक मराठी वाङमयाचा इतिहास (१८०० ते १९२०)	१. वाङमयीन इतिहासाचा सर्वांगीण अभ्यास करणे २. कालखंडाची सामाजिक व सांस्कृतिक पार्श्वभूमी समजून घेणे ३. वाङमयप्रकारनिहाय इतिहासाचा आढावा घेणे	१. वाङमयीन इतिहासाचा सर्वांगीण अभ्यास केला जातो २. कालखंडाची सामाजिक व सांस्कृतिक पार्श्वभूमी समजून घेतली जाते ३. वाङमयप्रकारनिहाय इतिहासाचा आढावा घेतला जातो
	B.A.S.Y. (Opt.) दृक-श्राव्य माध्यमांसाठी लेखन कौशल्ये, साहित्याचे प्रकारांतर आणि माध्यमांतर	१. दृक-श्राव्य माध्यमांसाठी लेखन कौशल्यांचा आभ्यास करणे २. दृक-श्राव्य रूपात कार्यक्रमांची ओळख करून देणे ३. साहित्याच्या प्रकारांतराचे स्वरूप समजून घेणे ४. साहित्याच्या माध्यमांतरावर प्रकाश टाकणे	१. दृक-श्राव्य माध्यमांसाठी लेखन कौशल्यांचा आभ्यास केला जातो २. दृक-श्राव्य रूपात कार्यक्रमांची ओळख करून देण्यात येते ३. साहित्याच्या प्रकारांतराचे स्वरूप समजून घेतले जाते ४. साहित्याच्या माध्यमांतरावर प्रकाश टाकण्यात येतो
	B.A.T.Y. (Opt.) भारतीय, पाश्चात्य साहित्यविचार	१. साहित्याचे स्वरूप समजून घेणे २. साहित्याच्या प्रयोजनावर प्रकाश टाकणे ३. साहित्याची निर्मितीप्रक्रिया समजून घेणे	१. साहित्याचे स्वरूप समजून घेतले जाते २. साहित्याच्या प्रयोजनावर प्रकाश टाकला जातो ३. साहित्याची निर्मितीप्रक्रिया समजून घेण्यात येते

		४. साहित्यातील रसविचाराचे आकलन करणे	४. साहित्यातील रसविचाराचे आकलन केले जाते
	B.A.T.Y. (Opt.) भाषाविज्ञान, व्याकरण व निबंध	१. भाषेचे स्वरूप समजून घेणे २. वर्णनात्मक भाषाविज्ञानाचा अभ्यास करणे ३. मराठी व्याकरणतील संकल्पना समजून घेणे ४. निबंधाच्या स्वरूप व प्रकाराचा आढावा घेणे	१. भाषेचे स्वरूप समजून घेतले जाते २. वर्णनात्मक भाषाविज्ञानाचा अभ्यास केला जातो ३. मराठी व्याकरणतील संकल्पना समजून घेण्यात येते ४. निबंधाच्या स्वरूप व प्रकाराचा आढावा घेतला जातो
	B.A.T.Y. (Opt.) मध्ययुगीन मराठी वाङमयाचा इतिहास	१. मराठी भाषेच्या प्रारंभकाळाचा शोध घेणे २. महानुभाव संप्रदायातील गद्य व पद्याचा आढावा घेणे ३. वारकरी संप्रदाय व त्याच्या वाङमयीन कार्यावर प्रकाश टाकणे ४. पंडिती कवितेचे स्वरूप समजून घेणे ५. शाहिरांच्या पोवाडा व लावण्यांचा अभ्यास करणे	१. मराठी भाषेच्या प्रारंभकाळाचा शोध घेतला जातो २. महानुभाव संप्रदायातील गद्य व पद्याचा आढावा घेण्यात येतो ३. वारकरी संप्रदाय व त्याच्या वाङमयीन कार्यावर प्रकाश टाकला जातो ४. पंडिती कवितेचे स्वरूप समजून घेण्यात येते ५. शाहिरांच्या पोवाडा व लावण्यांचा अभ्यास केला जातो
	B.A.T.Y. (Opt.) प्रकल्प कार्य	१. संशोधनात्मक दृष्टीचा विकास करणे २. साहित्याचे संकलन व मूल्यमापन करणे ३. संशोधनात्मक लेखन कौशल्ये आत्मसात करणे ४. संदर्भ व साधनांचे उपयोजन करणे	१. संशोधनात्मक दृष्टीचा विकास होतो २. साहित्याचे संकलन व मूल्यमापन करण्यात येते ३. संशोधनात्मक लेखन कौशल्ये आत्मसात होतात ४. संदर्भ व साधनांचे उपयोजन केले जाते

Department of English

Programmer offered and Outcome

Sr No.	Programme	Objective	Programmer specific objective
01	BA		
	Learning Language Skills	To strength students' ability in listing, speaking, reading, and writing both at practical and theoretical level	To introduce students to the grammatical properties in order to enable them to write and speak English continuously. To train them both in precision and in appropriate use of language through prose reading To acquaint students with a keen and subtle way in which English language used.
	Outcome:		The students are aware of the use of English Language. The Students use various tools to improve communication
	THE STRUCTURE OF ENGLISH	*The course aims at giving students advanced knowledge of English in matter of speaking and writing.	To help students towards better pronunciation. *To enable students to acquire the structure of English language.
	Outcome		The students are differentiating the local pronunciation and RC/BBC pronunciation. The students are checking as well as observing pronunciation of general speaking people and the expert. The Students are trying to imitate RC/BBC pronunciation of English Language

	READING LITERATURE	To enable students to read and appreciate various forms of literature and critically interact with them from different perspectives.	To introduce students to appropriate literary strategies to read Literature. *To pinpoint how far literary language deviates from ordinary Language. *To unravel many meanings in a literary text.
	Outcome:		The students are differentiate the literary genre The students are developing the sense of literariness Development of overall linguistic competence and communicative skills of the students Students are exposed to the basics of literature and language Students are familiarized with the basic units of language to become aware of the technical aspects and their practical usage.
	BATY	To introduce the students to Modern English Literature asproduction of the age To familiarize the students with the literary terms and introduce to them various streams in literary criticism and develop in English To help the students to approach and appreciate Indian literature in English To introduce the students to American literature and its diverse cultures reflected in writing. To make the students able to understand the background of English	To make the students understand how the literature of modern period relates to the important trends of the period. To make the students aware of the fact that all readers are critics and introduce them to basic texts in criticism while developing critical thinking in them To introduce the students to the thematic concerns, genres and trends of both Indian Writing in English and American Literature To lead the students to see how texts are affected by the context.

		literature and help them to write on its development.	
	Outcome:		The students are developing the critical sense to understand the literary texts The students are familiarized with excellent pieces of prose and poetry in English to realize the beauty and communicative power of English Students are exposed to native cultural experiences and situations and develop humane values and social awareness Students are familiarized with different types of literature in English, the literary devices and terms and they understand the literary merit, beauty and creative use of language Development of values and human concern in students through exposure to literary texts
02	BCA/BCS		
	Communicative Skills	To introduce advance topics to self-asses various components of communication skills as well as to improvelistening, reading, writing, and speaking and presentation skills through practice	To equip students of computer science with effective speaking and listening skills in English To help them develop their soft skills and people skills, which will make the transition from college to workplace smoother and help them to excel in their jobs. To enhance students' performance at Placement Interviews, Group Discussion and other recruitment exercise

	Outcome		The students are developing speaking, reading, and writing skills.
03	B.Com		
	Written and Spoken Communication Skills & Business Communication	To help students achieve excellent business communication skills for better employment	To introduce students to multi business communication skills To inspire students for enterprise through prose reading To strength students' writing skill through grammar.
	Outcome:		The students are developing communication skills and business communication skills as well as writing skills

DEPARTMENT OF SANSKRIT

UG Outcomes

Sr. No	Program	Program Objectives	Program Specific Outcomes
	BA/B.Sc/ B.Com SL Sanskrit	१) संस्कृत साहित्याविषयी आवड नि-र्माण करणे २) प्राचिन संस्कृत काव्य भाषेचा परिचय करुन देणे. ३) मुल्य विचार प्रधान व संस्कारक्षम वाङःमय म्हणून संस्कृत वाङःमयाचा परिचय करुन देणे. ४) सुबोधशैली कमीशब्दात स्पष्टपणे विचार आशय अभिव्यक्त करणाऱ्या संस्कृत काव्य भाषेचे व लेखन शैलीचे अध्ययन करणे. ५) आधुनिक काळात संस्कृत भाषेची उपयोगीता अभ्यासणे. ६) संस्कृत वाङःमयातील विज्ञाननिष्ठ व शास्त्रीय विचारांची ओळख ७)वेद,दर्शा,उपाशिद,आयुर्वेद,-ाष्टशास्त्र,स्त्रोत्रवाङःमय, छंदशास्त्र,अर्थशास्त्र,पुराभिलेख,आधुन्-ाक काव्य,असा साहित्याचा सर्वांगीन परिचय ८) संस्कृत वाङःमय हे मुल्यप्रधान वाङःमय आहे. इ नैतिक,सामाजिक,संस्कृतिक,धार्मिक मुल्य आचार व तत्वांचे आदर्श घालुन देणे.	1) संस्कृत साहित्याविषयी आवड निर्माण होते. २) प्राचिन संस्कृत काव्य भाषेचा परिचय करुन घेतात. ३) मुल्य विचार प्रधान व संस्कार क्षम वाङःमय म्हणून संस्कृत वाङःमयाचा परिचय समजुन घेण्यास मदत होते. ४) सुबोधशैली कमीशब्दात स्पष्टपणे विचार आशय अभिव्यक्त करणाऱ्या संस्कृत काव्य भाषेचे व लेखन शैलीचे अध्ययन करतात. ५) आधुनिक काळात संस्कृत भाषेची विद्यार्थी अभ्यासतात. ६) संस्कृत वाङःमयातील विज्ञा-ननिष्ठ व शास्त्रीय विचारांची ओळख करुन घेतात. ७)वेद,दर्शा,उपाशिद,आयुर्वेद,-ाष्टशास्त्र,स्त्रोत्रवाङःमय,छंदशास्त्र, अर्थशास्त्र,पुराभिलेख,आधुनिक काव्य,असा साहित्याचा सर्वांगीन परिचय यातु विद्यार्थ्यांना होवु शकतो. ८) संस्कृत वाङःमय हे मुल्यप्रधान वाङःमय आहे. नैतिक,सामाजिक, संस्कृतिक,धार्मिक मुल्य आचार व तत्वांचे विद्यार्थी आदर्श जिवनात घालुन घेतात.
	BA/BSc/ B.Com. I Year (SL) संस्कृत सरिता	१) संस्कार क्षम विद्यार्थी घडविण्यास व संस्कृत साहित्याची ओळख सांगणे. २) संस्कृत सुभाषिताची तोंडओळख	१) संस्कारारातु समाज घडविण्यास मदत होते. २) संस्कृत सुभाषिते पाठ व ओळख होते.

		करुा देणे. ३) वक्तृत्व स्पर्धे सुभाषिताचा वापर ४) संस्कृत वार्तांकण करण्यासाठीची तयारी ५) संस्कृत वर्तमाापत्र लेख लिहीण्यास अभिरुची	३) वक्तृत्व स्पर्धे सुभाषिताचा वापर करतात. ४) संस्कृत वार्तांकण करण्यासाठीची तयार करण्यास प्रेरणा मिळते. ५) संस्कृत वर्तमाापत्र लेख लिहीण्यास अभिरुची िर्माण होते.
	BA/BSc/ B.Com. II Year (SL) गिर्वानमंजरी	१) विद्यार्थ्यामध्ये संस्कृत विषयाची आवड निर्माण होते. २) विद्यार्थ्यांची वाचा व लेखा क्षमता विकसीत करण्यास मदत होते. ३) भाषेचे जशास तसे आकलन करण्याची व वापर करण्याची क्षमता विकसीत होते. ४) संस्कृत कथा साहित्याची ओळख करुन घेण्यास मदत ५) संस्कार क्षम मुल्य विकसीत करणे	१) विद्यार्थ्यामध्ये संस्कृत विषयाची आवडीने ग्रहण करतात. २) विद्यार्थ्यांची वाचा व लेखा क्षमता विकसीत करण्यास मदत करुन घेतात. ३) भाषेचे जशास तसे आकलन करण्याची व वापर करण्याची क्षमता विकसीत करुन घेतात. ४) संस्कृत कथा साहित्याची ओळख करुन घेतात. ५) संस्कार क्षम मुल्य विकसीत करण्यास मदत होते.

DEPARTMENT OF HISTORY

Course objectives and outcomes

Course	Course Objectives	Course Outcomes
B.A. HISTORY	- 1. To enable the students to develop Knowledge, Understanding, Critical thinking, Practical skills, Interests and Attitudes relating to historical matters. - 2. History aims at helping students to understand the present existing social, political, religious and economic conditions of the people, the development of the past & the religion, customs institutions, administration and so on. - 3. History thus helps students to understand the present day problems at regional, national and international level accurately and objectively. This understanding enables students to lead useful and efficient lives. - 4. To creates interest as well	1. The student should be able to develop the inclusive approach for sustainable society including all weaker section of the society like differently abled people, dalit, tribals etc.. 2. Developing every aspect of analysis through critical thinking by studying various events of the past and present and applying the same in practical life *3.Increase the ability to speak and discuss with confidently on the subject matter and developing effective communication.* *4.Elicit views of others mediate disagreements and help reach conclusions in group settings* *5.Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.* *6. Recognize different value systems including your own,*

	as affection for reading historical figures, characters, events and facts which are found necessary for solving the present problems effectively. - 5. The student would be able to acquires knowledge of various terms, concepts, events, ideals, problems personalities and principles related to the study of history.	*understand the moral dimensions of your decisions, and accept responsibility for them.* 7. Understand the issues of environmental contexts and sustainable development. 8..Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes . 9. The Student should be able to develop the ability to not only recognize problems but also seek solutions for them. 10.The Student should be able to assume responsibility demanded by situation in day to day life.
	- **Course Specific Objectives**	- **Course Specific Outcomes.**
B.A.F.Y.	**PAPER Ist SHIVAJI AND HIS TIMES** 1.To introduce innovative study techniques in the study of History of Maratha to make it value based, conceptual and thought provocative. 2.To introduce International elements in the study of Marathas to facilitate comparative analysis of this history.	- Students understood basic concepts of Maratha history. - Historical perspectives developed among the students. - Students known to use of historical knowledge in practical life. - Students understood the various

	3.To highlight the importance of past in exploration of present context. To understand the Socio – economic, cultural and political background of 17th century Maharashtra. 4.To increase the spirit of healthy Nationalism & Secularism among the student. 5.To encourage student s to for competitive examinations. 6.To promote interest in the discipline of History. Suggesting the Importance of References	importance of Maratha history.
B.A.F.Y	**Paper –II Modern Maharashtra.** 1.The purpose of the course is to enable the students to study the history of modern Maharashtra . 2.To highlight the ideas, institutions, forces and movements that contributes to the modern Maharashtra. 3.To acquaint the students with various interpretative perspectives. 4. To introduce the student to the regional history within a broad national framework	1.Students known the history of modern maharashtra. 2.Students studied pesants,tribes movements . 3.Students known the social ,economical,cultural history of modern maharashtra. 4.Students understood the national contribution of Maharashtra.

B.A.F.Y.	PAPER: III **History of Maratha :** 1.To introduce innovative study techniques in the study of History of Maratha to make it value based, conceptual and thought provocative. 2.To introduce International elements in the study of Marathas to facilitate comparative analysis of this history. 3.To highlight the importance of past in exploration of present context. To understand the Socio – economic, cultural and political background of 17th century Maharashtra. 4.To increase the spirit of healthy Nationalism & Secularism among the student. 5.To encourage student s to for competitive examinations. 6.To promote interest in the discipline of History. Suggesting the Importance of References	- Students understood basic concepts of Maratha history. - Historical perspectives developed among the students. - Students known to use of historical knowledge in practical life. - Students understood the various importance of Maratha history.
B.A.F.Y.	**PAPER IV Tweinth century of Maharashtra**: 1.The purpose of the course is to enable the students to study the history of modern Maharashtra .	1.Students known the history of modern maharashtra. 2.Students studied pesants,tribes movements .

	2.To highlight the ideas, institutions, forces and movements that contributes to the modern Maharashtra. 3.To acquaint the students with various interpretative perspectives. 4. To introduce the student to the regional history within a broad national framework .	3.Students known the social ,economical,cultural history of modern maharashtra. 4.Students understood the Indian national movement in the contribution of Maharashtra.
B.A.S.Y.	**PAPER V- "**HISTORY OF EARLY INDIA**"** (UP TO B.C.300) - To understand the ancient Indian History. - To study of Economic,political,cultural,religious and social History of ancient India. - To know the major issues of Development of human life in India.	- Students understood the ancient India. - Students studied of various prespective of ancient india. - Students known the human life of ancient India.
B.A.S.Y.	**PAPER VI** "HISTORY OF DELHI SALTANAT **"** (A.D.1200-A.D.1526) - To know the history of siltanat. - To Study the social,economical,religious	- Students known the history of Delhi sultanat. - Students studied of socio,economic,political,religious and administrative policy of

	and political condition of Delhi sultanat . - Understanding the administrative policy of sultanat. - To know the urbanization and its concept.	sultan. - Students understood the rulling class in age of delhi sultanat. - Students known the trade,commerce and urbanization.
B.A.S.Y.	- **PAPER VII** **"HISTORY OF INDIA(B.C.300A.D650)"** - To understand the ancient Indian History. - To study of Economic,political,cultural,religious and social History of ancient India. - To know the major issues of Development of human life in India.	- Students understood the ancient India. - Students studied of various prespective of ancient india. - **Students known the human life of ancient India**
B.A.S.Y.	**Paper VIII** - **"HISTORY OF MUGHAL INDIA (A.D.1526-1757)"** - To know the history of Mughal - To Study the social,economical,religious and political condition of Mughal age . - Understanding the administrative policy of	- Students known the history of Mughal. - Students studied of socio,economic,political,religious and administrative policy of Mughal. - Students understood the rulling class in age of Mughal. - Students known the

	Mughal Administrator. - To know the urbanization and its concept..	trade,commerce and urbanization.
BATY	**Paper-IX** **«HISTORIOGRAPHY»** ■ 1.To orient students about how history is studied, written and understood. ■ 2. To explain methods and tools of data collection ■ 3. To understand the meaning of Evolution of Historiography. ■ 4. To study the Various Views of Historiography. ■ 5. To study the approaches to Historiography. ■ 6. To study the types of Indian Historiography. ■ 7. To describe importance of inter-disciplinary research. ■ 8. To introduce students to the basics of research. ■ 9. To acquaint the student with the recent research in History. ■ 10. Learn how to use sources	■ 1.Student understood the historiography. ■ 2. Student know the historical research method. ■ 3. Student studied of Hostoriography. ■ 4. Student understood the various views and approaches of Historiography. ■ 5. Student know the Research and Historiography. ■ 6. Student understood the inter disciplinary research approach and study.

	in their presentation.	
BATY	**PAPER-X-HISTORY OF INDIAN NATIONAL MOVEMENT-(1885-1947:** ■ .The course is designed to help the student ■ to know- History of freedom movement of India, aims, objectives problems and progress of Independent India. ■ It aims at enabling the student to understand the processes of rise of modern India. ■ The Course attempts to acquaint student with fundamental aspects of Modern Indian History. ■ To explain the basic concepts/ concerns/ frame work of Indian History	- Students studied of basic concepts of modern india and History of freedom struggle Movement. - Students understood the modern India .
BATY	- **PAPER XI- WOMENS STRUGGLE IN MODERN INDIA-1850-1947.** - To understand Major issues and conception of womens problems in 19th Century : sati tradition, life of widows ,banns on woman education.secondary position of women in family and society**.** - To understand Women struggle and Approaches . - understand Social reform	- Students understood the womens condition. - Students understood women struggle & various apporoaches - Students studied of problems of inequality.

	movement and womens emancipation . - To study of Women and Law	
BATY	- **PAPER XIII- " FIELDS OF HISTORY** - To studied Archaeology,Museology and Tourism. - To understand the other branches of history. - To historical importance in tourism,museology and Archaeology..	- Student understood the fields of History. - Student studied the other branches. - Student knows the historical importance.
B.A.T.Y	**PAPER XIV : LANDMARKS IN THE HISTORY OF MODERN WORLD** 1.To help the student to know Modern World. 2.To acquaint the student with the Socio-economic & Political developments in other countries. And understand the contemporary world in the light of its background History . 3.To orient the students with political history of Modern World. 4. To acquaint Students about the main developments in the Contemporary world.	- Student understood the modern world and rennainance. - Students studied of different Countries contemporary Socio,economic developments.. - Students understood the revolution of American,French,Industrial and Russian. - Students understood the first and second world war. - Student understand the woeld concept.

	5.To understand to important development in 20th century World. -To Impart knowledge about world concepts.	
B.A.T.Y.	**PAPER XV- GLIMPSES OF THE HISTORY OF MARATHWADA "** - To know Regional history. - To understand history of Marathwada. - -To study of socio,economic,religious,political and architecture condition	- Students known the Regional history. - Students understood history of marathwada. - Students studied of Contribution in national heritage.
B.A.T.Y.	**PAPER XVI- PROJECT WORK:** - To develop research perspective among student. - To know the research methodology.	- Research perspective developed among students. - Students known the research methodology.

DEPT. OF SOCIOLOGY

Course objectives and outcomes

Course	Course Objectives	Course Outcomes
B.A. SOCIOLOGY	- To understand basic concepts of sociology - To create interest among the students about various subfields of Sociology. - To understand social composition of Indian. - To understand the problems of rural and urban India. - To understand basic concepts of Demography. - To study of conceptual perspectives on Development. - To study of classical traditions. - To know social disorganization in India. - To understand research process and develop research perspective among student.	- Students understood basic concepts of sociology. - Students' interest in various subfields in sociology increased. - Students understood social composition of India. - Students studied various problems of rural and urban India. - Students understood basic concepts of Demography. - Students studied various conceptual perspectives on Development. - Students studied classical traditions.

		- Students known social disorganization in India - Students understood research process and developed research perspectives among students.
	- **Course Specific Objectives**	- **Course Specific Outcomes.**
B.A.F.Y.	**PAPER Ist INTRODUCTION TO SOCIOLOGY** - To understand basic concepts of sociology - To develop sociological perspectives among the students - To know the uses of Sociology in practical life. - Understanding the methods of sociology by the students.	- Students understood basic concepts of sociology. - Sociological perspectives developed among the students. - Students known to use of sociological knowledge in practical life. - Students understood the various methods of Sociology.
	Paper –II Individual and Society. - To know the relations between the individual and Society. - To understand and study of	- Students known the relations between the individual and society. - Students studied the

	social structure. - To know the social stratification in Indian society. - To study of Social change in society. - To understand the system of social control.	social structure and understood it. - Students known the social stratification in Indian society. - Students understood social change in society. - Students studied the system of social control and they know that work and nature of social control in society.
	PAPER: III **INTRODUCTION TO SUBFIELDS OF SOCIOLOGY:** - To study of subfields of sociology. - To create interest among the students about various subfields of Sociology. - To understand scope and wideness of Sociology.	- Students studied various subfields of sociology. - The interest of students increased in various subfields of Sociology. - Students understood scope and wideness of Sociology.
	PAPER IV Indian Social Composition: - To understand social composition of Indian.	- Students understood social composition of India.

	- To know the features of Indian society. - To study of Indian population. - To understand the Indian constitution. - To study of rural society and Agrarian structure.	- Students known the features of Indian society. - Students studied Indian population - Students understood Indian constitutions. - Students studied rural society and agrarian system.
B.A.S.Y.	**PAPER V- Problems of Rural India** - To understand the problems of rural India. - To study of rural Economy. - To know the major issues of Development in rural India.	- Students understood the problems of rural India. - Students studied of rural economy. - Students known the major issues of development of rural India.
B.A.S.Y.	**PAPER VI Contemporary Urban Issues** - To know the contemporary urban issues. - Studying urbanization process. - Understanding urban planning. - To know the urban change because of globalization.	- Students known the contemporary urban issues. - Students studied of urbanization process. - Students understood the urban planning - Students known the urban changes that happened due to

		globalization.
	PAPER VII- POPULATION IN INDIA: - To understand dynamics of Population - To understand basic concept of Demography. - To study of demographic transition. - Studying Indian population Policy.	- Students understood dynamics of population. - Students understood basic concept of Demography. - Students studied demographic transition. - Students studied Indian population police
	PAPER VIII- SOCIOLOGY OF DEVELOPMENT: - To study of conceptual perspectives on Development. - To know the development issues. - To study of development approaches. - Knowing the Indian experience of development.	- Student studied of conceptual perspectives on development. - Students known the development issues. - Student studied various development approaches. - Students known the Indian experience of development.
BATY	**PAPER IX-SOCIOLOGICAL TRADITIONS:** - To study emergence of sociological thought.	- Students studied emergence of

	- To understand thought of pioneers in Sociology. - To study of classical traditions.	sociological thought. - Students understood thought of pioneers in Sociology. - Students studied classical traditions.
BATY	**PAPER X- INTRODUCTION TO RESEARCH METHODOLOGY:** - To study of basic concepts of Research Methodology. - To understand research process.	- Students studied of basic concepts of Research Methodology. - Students understood Research process.
BATY	**PAPER XI- SOCIAL PROBLEMS IN INDIA.** - To understand nature of corruption and crime in India. - To understand problems related displacement and rehabilitation. - To study of problems of Inequality.	- Students understood nature of corruption and crime in India. - Students understood problems related displacement and rehabilitation. - Students studied of problems of inequality. -
BATY	**PAPER XIII- SOCIOLOGICAL THEORIES:** - To develop theoretical approach among the students.	- Theoretical approach developed among the students. - Sociological thinking

	- To develop sociological thinking among the students. - To study of different theories in sociology.	developed among the students. - Students studied different theories in sociology.
	PAPER XIV : SOCIAL RESEARCH MEHTODS: - To develop research approach among the students. - To study of different techniques of sociological investigation. - To understand basic statistical measures. - To know the utility of the social research.	- Research approach developed among the students. - Students studied of different techniques of sociological investigation. - Students understood basic statistical measures. - Students understood utility of social research.
	PAPER XV- SOCIAL DISORGANIZATION IN CONTEMPORARY INDIA: - To know social disorganization in India. - To understand violence and social disorder. - To study of regionalism in India.	- Students known the social disorganization in India. - Students understood violence and social disorder in India. - Students studied of

		regionalism in India.
	PAPER XVI- PROJECT WORK: - To develop research perspective among student. - To know the research methodology.	- Research perspective developed among students. - Students known the research methodology.

Department of Economics

Course Outcomes:-
What the learner will know and be able to do by the end of a course or program.

Program specific outcomes:-
The skills, knowledge, and behavior the students acquire as they go through a specific course within a program.

Department :- Economics	
Programme Specific Outcome	I. Economics students in general will be able to pinpoint and understand the past, present economic conditions of the country. They will also be able to forecast the future course of changes and development through their knowledge of policies and programmes set by the governments and other development agencies. They are equipped with the techniques to find solution of the problems like mobilization of manpower and materials available in the country. II. Basically, economic graduates are familiar with the knowledge and application of microeconomics and macroeconomics for the formulation of policies and planning. They are equipped with all the relevant tools/ knowledge based on economic principles including market functions and structures, efficiency in manpower and resources management, need of credit/finance for initiating and accelerating projects. III. Students are taught the techniques to collect and disseminate information like primary and secondary data, preparation of questionnaire. Students are deployed to do survey and on the spot interaction with the personnel of the case under study. Students who graduated from this institution are directly involved and effectively participate in the discussions and final presentation of the findings of the projects undertaken.
Course Outcomes	
Course B.A.	**Outcomes**
F.Y. Sem. – I, Paper – I 101 Micro Economics	1.The Various Definition of Economics Student hadUnderstood. 2. Student Understood Definition and nature of welfare Economics, The concepts of new welfare Economics. 3. Laws of Demand and Supply grasped by the student. 4. Theory of Consumer Behavior learnt deeply. 5. Analysis of Market Equilibrium analyzed by the student.
F.Y. Sem. – I, Paper – II 102 Indian Economy	Indian Economy 1. To Develop ideas of the basic characteristics of Indian economy, it's potential on natural resources. 2. Understand the importance, causes and impact of population

	growth and its distribution, translate and relate them with economic development. 3. Analyzation of Various Index like - Human Development Index, Human Poverty Index& Gender Related Development Index 4.Student conceptualization on Poverty & Unemployment 5. Grasp the importance of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government
F.Y. Sem. – II, Paper – III 103 Price Theory	1. Student Analyzed Costs and Revenue 2. Student Grasp the Structure of Market : Perfect Competition, monopoly, oligopolies& monopolistically competitive industry 3. Understand how factor market works, identify the various determinants of firm's demand for factor services, bilateral monopoly, demonstrate monopsony in factor market and factor market equilibrium 4. Demonstrate marginal productivity theory of distribution, theory of wages, identify different types of rent, and illustrate different theories of interest and profits.
F.Y. Sem. – II, Paper – IV 104 Money Bankingand Finance	1.Student learnt Meaning & Function of Money 2. Student Grasp the Structure & functions of various Banking. 3. Functions of Reserve Bank of India learnt by the student. 4. Student Analyzed of Methods of Credit Control – Qualitative and Quantitative 5. Understand the conditions of financial markets and its impact in the economy.
S.Y. Sem. III V 105 Macro Economics	1. Define and explain the process of calculating national income, identify its components, demonstrate circular flow of income, analyze the various income identities with government and international trade, define the concept of green accounting. 2. Understand Say's law of market, classical theory of employment and Keynes objection to the classical theory, demonstrate the principle of effective demand and income determination. 3. Explain the meaning of consumption function, relationship between APC and MPC, consumption and income, concept of multiplier and analyze the theories of absolute and relative income hypotheses. 4. Understand the relationship between investment and savings, demonstrate investment multiplier, and understand the meaning of MEC and MEI. 5. Analyze the Theory of Track Cycle.
S.Y. Sem. III VI 106 Economics of Development	1. Studentunderstood meaning of Growth & Development. 2.Student Grasp Theories of Development :Adam smith ,Malthus ,Karl marks, Schumpeter 3. Student learnt Factors in Development Process. 4. StudentAnalyzed GrowthModels: R.Nurks e, Rostows stages. 5.Student studied role of agriculture, Industry, & Service in development.

S.Y. Sem. IV 107 Public Finance	1. Student understood meaning, nature and scope of Public Finance&Importance. 2. Student analyzed difference between Privet and public finance. 3. Understand the possible burden, benefits and distribution of various types of taxes among various classes of people, know the general trend and impact on general welfare and arouse them to suggest good and bad tax system. 4. Student Grasp Public Expenditure, Public Debt & Union Budget
S.Y. Sem VIII 108 Statistical Method	1. Student understood Meaning, Nature of Statistic 2. Identify and define basic statistics techniques which are needed for studying in Economics. 3. Apply knowledge of statistical measures such as Mean, Median and Mode for analysis and interpretation of data. 4. Analyze the different measures of dispersion that are useful in the field of Economics. 5. Develop skills and knowledge to apply data through graphs for analyzing. 6.Student Analyzed correlation analysis & Index Number.
T.Y. Sem V 109 International Economics	1. Identify the basic difference between inter-regional and international trade, understand how international trade has helped countries to acquire goods at cheaper cost and explain it through the various international trade theories. 2. Show the benefits of international trade in a way how nations with strong international trade have become prosperous and have the power to control. 3. Student Grasp the Gains from Trade. 4.Show the importance of maintaining equilibrium in the balance of payments and suggests suitable measures to correct disequilibrium 5. Be aware of the changes in the composition as well as direction of foreign trade after international trade and know the causes and effects of deficits in the balance of payments, measures adopted to correct the deficits and identify the need for having trade reforms. 6.Analyze the merits, Demerits andlimitation of devaluation
T.Y. Sem V 110 Agricultural Economics	1. Sensitize the overall development and engine of growth in agriculture. 2. Gain knowledge of the causes of regional variations in productivity and production, social and economic inequality, size of land holdings and lack of quality inputs etc. and suggest appropriate measures for the whole economy. 3.Student Grasp the Technology in agriculture 4. Draw distinctive features of rural and urban economy or agricultural and non-agricultural which can influence the whole economy. 5. Analyze the Fifty years of Indian Agriculture : an over view Agriculture
T.Y. Sem V 111	1. Student understood Mercantilism & Physiocracy.

History of Economic Thought	2. Analyze the Classical period & Marginalists Economists. 3. Gain knowledge of the Keynesian Ideas.
T.Y. Sem VI 113 Research Methodology	1. Student understood Meaning, nature, scope and objectives of social research. 2. Student Analyzed Research Design & Data Collection method. 3. Student Analyzed Data Presentation and Analysis.
T.Y. Sem VI 114 Industrial Economics	1. Student understood importance and role of industries in economic and social development. 2. Student Grasp Industrial Organization and Ownership Structure. 3. Analyze the Location and Dispersion of industries. 4. Student understood Composition of Industrial Sector
T.Y. Sem VI 115 Economy of Maharashtra	1. To Develop ideas of the basic characteristics of Maharashtra's economy, its potential on natural resource. 2. Understand the problems of Agricultural in Maharashtra. 3. Student Grasp the Cooperative Movement in Maharashtra. 4. Analyze the Infrastructure and Industrial development in Maharashtra.
T.Y. T.Y. Yearly 112 & 116 Project work	1. Student learnt Project writing skill. 2. Student Analyzed Research Design & Data Collection. 3. Students are deep study of specific topic. 4. Gain knowledge of the research projects.

Department of Public Administration

After completion of BA programme students should be able to-

- Students enable to develop academic ability in the subfields of Indian Governmentand Administration, Three tire administration, Local self government, Public Administration,Administrative Theory, Human relation Theory, Personnel administration and budget system in India Human Resource Management, Education System and administration in India, Organization theory and principal, Public policy and management Ideology.
- Students enable to develop and be able to demonstrate skills Planning, Decision making, leadership, managing a public sector, as well aspresenting research in public administration.
- Students enable to analyze administrative policy problems, importance of public participation in planning, implementation, evaluation and formulate policy and work culture options.
- Students enable to discuss the major theories and concepts of administration like E- Administration, Good Governance, Administrative behavior and Administrative reforms.
- Students evaluate the role of community groups in local governments.
- The learning outcomes based on curriculum for BA Public Administration to enable students with the necessary knowledge, understanding and skill relevant for local, state and national governance.

PROGRAMSPECIFIC OUTCOMES: BA Public Administration

i)The learner/ students who completed BA undergraduate programme in Public Administration may involve academic, behavioral and social competencies/ efficiency.

ii) Students Work as a teacher in colleges, schools and high schools.

iii) Serve as political party member, administrator, and well citizen of India.

iv) Students can admit to MA Public Administration and Political Science, LLB, MBA etc.

v) Students can prepare various competitive exam and specially UPSC.

B.A.F.Y.

Principles and Concepts of Public Administration(Paper-I)

♦Students should be able to knowledge and understanding public administration scope, nature and importance.

♦Students understand organization and its principles.

♦Students learn how take decision, planning, supervision and coordination.

♦Students develops professional skills and abilities like administrative leadership.

Indian Administration (Paper-II)

♦Students enable knowledge about evolution and growth of Indian administration.

♦ Students enable to identify the causes, impact of British colonial rule.

♦Students Understand Indian Governance and Administrative System.

♦Students understands his fundamental rights and duties. Its helps to create social responsibility.

♦ Grasping the role of Union executive.

Maharashtra Administration(Paper-III)

♦Students enable knowledge about evolution and growth of Maharashtra administration.

♦ Students Understand Maharashtra Governance and Administrative System.

♦ Students understands various commissions and his role.

♦ Grasping the role of State executive**.**

District Administration(Paper-IV)

♦Students enable knowledge about evolution and growth of District administration.

♦ Students understand District administrative System and its functions.

♦ Students understand the role of district collector in law and order.

♦ Students enable knowledge of district police administrative system and its role.

B.A.S.Y.

Personnel Administration(Paper-V)

♦ Students understand public personnel administration, its issues, career systems and other terms related to personnel administration.
♦ Students understanding the personnel system and training programs of the Indian Republic.
♦ Students understand critical issues like employee associations, Employee and employer relations.
♦ Students enable knowledge and understand personnel administration problems.

Panchayti Raj and Rural Development (Paper -VI)

♦ Students enable knowledge various aspect of Panchayati Raj system and its evolution.
♦ Student understanding structure and function of Panchayati Raj.
♦ Develop the skills of political and administrative leadership,connecting the role and relationship of rural local democratic decentralized institutions (PRI).
♦ Students understand the importance of financial resources and various taxesof Panchayati Raj institutes.
♦ Students enable the knowledge of rural development programs.
♦Students enable to describe the features and provisions of Constitutional Amendment Acts regarding local Government Institutions.

Financial Administration (Paper- VII)

♦ Students enable knowledge of various aspect of Public Financial Administration in general and in the Indian context in particular.
♦ Students understanding budgeting, finance institute and financial resources in the Indian context.
♦ Understanding budgetary process and union – state financial relations.
♦ Student understanding the role of CAG in public financial administration.

Urban Local Self Govt. and Urban Development (Paper- VIII)

♦ Students enable knowledge various aspect of Urban local self Govt. and its evolution.
♦ Student understanding structure and function, role of Urban local self Govt.

♦ Students enable to describe the features and provisions of Constitutional Amendment Acts regarding local Government Institutions.
♦ Develop the skills of political and administrative leadership.
♦ Students understand the importance of financial resources and various tax of urban local self Govt.
♦ Students enable the knowledge of urban development programs.

B.A.T.Y.

Human Resource Development (Paper- IX)

♦ Students understand importance, nature of Human Resource Development.
♦Students enable the knowledge of means of Human Resource Development.
♦ Students understanding importance of value education, vocational and technical education.
♦ Develop the skills of personality developments.
♦ Students understand importance of human resource planning and managements.

Education Administration in India (Paper- X)

♦ Students understand educational developments and education administration.
♦ Students enable the knowledge of various Educational Commission, Educational Policies.
♦ Students understand changing aspect of education.
♦ Students understand importance of higher education and UGC, NAAC's role in higher education.

Administrative Thinkers (Paper- XI)

♦ Students understand management science and its importance, principles.
♦ Students enable the knowledge of human relation theory and administrative thoughts.
♦Students understand process of decision machining, leadership, conflict resolution way, communication.
♦ Students enable use administrative thoughts in personal life.

Public Policy and Development (Paper-XIII)

♦ Students understand basic concepts such as public policy, policy analysis, process of policy making and governance.
♦Students understand the knowledge of the public policy process in terms of formulation and implementations.
♦ Students understand models of public policy.
♦Students enable the knowledge of sustainable development, development programs and problems.

Health Administration in India (Paper-XIV)

♦ Students understand basic concepts such as Health, Hygiene and health related programs.
♦ Students understand health administration system in India.
♦ Students enable the knowledge of rural health programs and facility.
♦ Students understand and discuss problems of health and various schemes of Childs and women's related.

Recent Trends in Public Administration & Important Laws. (Paper- XV)

♦Students understand growths of new concepts and knowledge such as New Public Administration, E- Administration, Good Governance, Public Choice Theory etc.
♦Students enable the knowledge of important laws like Consumer Protection Act, Environment Protection Act, Right to Information Act, Right to Public Service Act.
♦ Students understand new working methods of administration and reforms.
♦ Students understand changing administrative cultures and government changing to citizen centric administration for developments.

Research Project (Paper – XVI)

- Student learnt Project Writing Skill.
- Student Analyzed Research Design & Data Collection
- Student are deep study of specific topic.
- Gain Knowledge of the research project.

Department of Geography

Courses Offered

Sr. No	Program	Program objectives	Program specific objective
1	**B.A.** Geography	To develop a strong footing in the fundamentals and specialize in the disciplines of his/her liking and abilities	Understand the nature and basic concept of Geomorphology, Climatology, tourism geography, Regional geography

Under Graduate: Course Offered

Sr.No	Course	Course Outcomes
1	**F.Y.B.A. (Sem-I)** Geo- 101- Elements of Geomorphology	I. To introduce the students to thebasic concepts inGeomorphology. II. To introduce latest conceptsin Geomorphology. III. To acquaint the students with the utility and application of Geomorphology in different regions andenvironment. IV. To make the students aware of the need of protection and conservation of different landforms.
2	**FYBA (Sem-I)** Geo-102 – Human Geography	I. To introduce the students to thebasic concepts in Geography. II. To make the students aware of the need of protection and conservation of physical and social profile of Racial Groups. III. To understand Types, Forms, Patterns and Functional Classifications.

3	**FYBA (Sem-II)** Geo-103 – Geography of Landform	I. To introduce the students to thebasic concepts of Landforms. II. To understand types and classification of weathering. III. To Learn Geographic agents and processes. IV. To learn about Land Form produced by Glacier and Underground water.
4	**FYBA (Sem-II)** Geo-104 – Regional Geography of Maharashtra	I. Position and Personality of Physical Division of Maharashtra II. Climate, Drainage, Soil and Natural Vegetation of Maharashtra. III. Study of Major Crops in Agriculture of Maharashtra. IV. Study of Agriculture related Industries in Maharashtra.
5	**FYBA (Sem- I & II)** Geo-105 – Practical Geography	I. To acquaint the students with the principles of surveying,its importance and utility in the geographicalstudy.
6	**SYBA (Sem- III)** Geo 106: Climatology	I. To introduce the students to the basic principles and concepts in Climatology II. To acquaint the students with the applications of Climatology III. To make the students aware of Atmospheric Pressure and Winds- Evaporation and condensation. IV. Role of Climate in Human Life
7	**SYBA (Sem-III)** Geo- 107- Population Geography	I. To provide an understanding of spatial andstructural dimensions ofpopulation II. To familiarizing the students with global and regionallevel problems III. To acquaint the students with the spatial, political and structural characteristics of human settlement undervaried environmentalconditions.
8	**SYBA (Sem- IV)** Gg- 108- Oceanography	I. To introduce the students to the basic principles and concepts in Oceanography II. To acquaint the students with the

		applications of Oceanography indifferent areas andenvironment III. To make the students aware of the Planet Earth and thereby to enrich thestudent's knowledge.
9	**SYBA (Sem- IV)** Geo- 109 – Settlement Geography	I. To introduce the students to the basic principles and concepts in Settlement Geography. II. To acquaint the students with the details of site and structure of Human Settlement III. To make the students aware of spatial Organization
10	**SYBA (Sem- III & IV)** Geo-110 – Practical Geography	I. To acquaint the students with the principles of surveying,its importance and utility in the geographicalstudy.
11	**T.Y.B.A.(Sem-V)** Geo111- Physical Geography of India	I. To acquaint the students with geography of ourNation. II. To make the student aware of the magnitude of problems and Prospects at Nationallevel. III. To help the students to understand the inter relationship between the subject and the society. IV. To help the students to understand therecent trends in regional studies.
2	**T.Y.B.A. (Sem-V)** Geo112- Geography of Environment	I. To acquaint the students with Concepts in Geography of Environment. II. Make the student aware of the magnitude of problems and Prospects of Biotic and Abiotic Factors. III. To help the students to understand the inter relationship between elements of Eco System. IV. To help the students to understand the Problems of Ecosystem and Environment

13	**T.Y.B.A. (Sem-V)** Geo113- Industrial Geography of Maharashtra	I. To acquaint the students with geography of our Nationand MaharashtraState II. To make the student aware of the magnitude of problems and Prospects at National level and state level III. To help the students to understand the inter relationship between the subject and thesociety. IV. To help the students to understand the recent trends in regionalstudies
14	**T.Y.B.A.(Sem-VI)** Geo114- Agricultural Geography of India	I. To Introduce students Agricultural activities and its relation with Geography. II. To Familiarize the students with new modern technical methods and their applications in Agricultural activities. III. To enable students to apply Previously knowledge in Problems and Prospects in agriculture
15	**T.Y.B.A.(Sem-VI)** Geo115- Geography of Natural Calamity	I. Definition, Nature and Scope of Natural Calamities. II. To familiarize the students with Causes, Effect and distribution of Earthquakes and Volcano. III. To Understand the Green House Effect, Global Warming and its Implications
16.	**T.Y.B.A. (Sem-V & VI)** Geo116- Practical Geography	I. To use forecasting and data analysis techniques in case of univariate and multi variate data sets. II. To test the hypotheses particularly about mean, variance, correlation, proportions and goodness of fit. III. To acquaint the students with basic of Statistical data
17	**T.Y.B.A. (Sem-V & VI)** Geo117- Project Work	I. Preparation of project on Geographical or environmental Issues

18	**T.Y.B.A. (Sem-VI)** Geo118- Biogeography	I. To Introduce Nature, Scope and significance of Biogeography. II. To acquaint with details of habitat i.e. plants animal association. III. To study Plant Geography and Landform Distributions. IV. To Learn about Zoo geography and Forest policy of India.
2	**T.Y.B.A. (Sem-V)** Geo112- Geography of Environment	I. To acquaint the students with Concepts in Geography of Environment. II. Make the student aware of the magnitude of problems and Prospects of Biotic and Abiotic Factors. III. To help the students to understand the inter relationship between elements of Eco System. IV. To help the students to understand the Problems of Ecosystem and Environment

Department of Geography

Geography Honours Course

Geography mainly concerns changes in spatial attributes in a temporal perspective. The Honoursprogramme in geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasises on human-environment relationship. During the first year of the programme, the students are trained on advanced concepts of physical and human geography. The third year allows them to concentrate on specific areas of the subject, on which they complete their field reports. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing. They will also be able to pursue M.A. /M.Sc. Course in Geography.

PSO1.Acquireing Knowledge of Physical Geography:

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

PSO2.Acquireing Knowledge of Human Geography:

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

PSO3. Ability of Problem Analysis:

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

PSO4.Conduct Social Survey Project:

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

PSO5. Application of modern instruments:

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

Department of Geography

Top 10 Reasons to Study Geography

1. To understand basic physical systems that affect everyday life (e.g. earth-sun relationships, water cycles, wind and ocean currents).
2. To learn the location of places and the physical and cultural characteristics of those places in order to function more effectively in our increasingly interdependent world.
3. To understand the geography of past times and how geography has played important roles in the evolution of people, their ideas, places and environments.
4. To develop a mental map of your community, province or territory, country and the world so that you can understand the "where" of places and events.
5. To explain how the processes of human and physical systems have arranged and sometimes changed the surface of the Earth.
6. To understand the spatial organization of society and see order in what often appears to be random scattering of people and places.
7. To recognize spatial distributions at all scales — local and worldwide — in order to understand the complex connectivity of people and places.
8. To be able to make sensible judgments about matters involving relationships between the physical environment and society.
9. To appreciate Earth as the homeland of humankind and provide insight for wise management decisions about how the planet's resources should be used.
10. To understand global interdependence and to become a better global citizen.

Dept. of Physical Education

U.G. Outcome.

Sr.No	Program	Program Objectives	Program Specific Outcomes
1.	शारीरीक शिक्षण	१.शारीरीक शिक्षणाविषयीची आवड निर्माण करणे. २.व्यक्तीचा सार्वांगीन विकास करणे. ३.शारीरीक विकास करणे. ४.व्यायामाचे महत्व विकसित करणे. ५.बौद्धिक, मानसिक विकास करणे. ६.खेळाचा विकास करणे.	१.शारीरीक शिक्षण विषयाची आवड निर्माण होते. २.व्यायाम करण्याची आवड निर्माण होते. ३.शारीरीक शिक्षणातुन व्यक्तीमत्व विकासात वाढ होते. ४.शारीरीक शिक्षणातुन चारित्राचे शिक्षण मिळते. ५.खेळाची आवड निर्माण होते. ६.बौद्धिक क्षमता निर्माण होते.
	B.A.F.Y. १०१ शारीरीक शिक्षणाचे तत्वज्ञान सामाजीक पाया आणि शारीरीक शिक्षणाचा इतिहास	१.शारीरीक शिक्षणातुन व्यायामीची आवश्यकता स्पष्ट करणे. २.शारीरीक विकासाबरोबर सामाजिक विकासाचे महत्व स्पष्ट करणे. ३.दैनंदीन जिवनात शारीरीक विकास निर्माण करुन शारीरीक क्षमता निर्माण करणे. ४.शारीरीक शिक्षणातील तत्वज्ञाना-विषयी विद्यार्थ्यांना माहीती देणे. ५.शारीरीक शिक्षणातील सामाजीक पायाची माहीती करणे. ६.विसाव्या शतकातील शारीरीक शिक्षणाविषयी माहीती देणे.	१.शारीरीक शिक्षणाचे स्वरुप समजते. २.शारीरीक क्षमता विकसीत होते. ३.शारीरीक शिक्षणातुन चारित्राचा विकास होतो. ४.शारीरीक शिक्षणातुन आदर्श नागरीक निर्माण होतो ५.शारीरीक शिक्षणातुन व्यक्ती चा सर्वांगिन विकास होतो. ६.शारीरीक शिक्षणातुन सामाजिक शिक्षणामुळे त्यांचा विकास होतो. ७.शारीरीक शिक्षणाचा इतिहास विद्यार्थ्यांना माहीत केल्यास त्यांना खेळाविषयी आवड निर्माण होते.
	B.A.F.Y. १०२ शारीरीक शिक्षणाचे तत्वे आणि विकास	१.शारीरीक प्रकाराची माहीती देणे. २.व्यायामाच्या तत्वाविषयी माहीती देणे. ३.सामाजिक मुल्याविषयी माहीती देणे. ४.शारीरीक शिक्षणाच्या दर्जाविषयी माहिती देणे.	१.शारीरीक प्रकाराची माहीती मिळते. २.व्यायाम कसा करावा हे माहीत होते. ३.सामाजीक मुल्यांची जान होते. ४.शारीरीक शिक्षणाचा दर्जा कसा असावा या विषयीचे ज्ञान मिळते.
	B.A.F.Y. १०३ शा.शिक्षणाचे प्रात्यक्षिक	१.मुलांना मैदानावर आणने. २.मुलांना मैदानी स्पर्धेचे ज्ञान देणे. ३.मुलांना १०० मी., उंच उडी, या कौशल्याची माहिती देणे.	१.मुलांना स्पर्धेचे ज्ञान मिळते. २.मुलांना खेळातील कौशल्याचे ज्ञान मिळते. ३.खेळाच्या इतिहासाची माहिती मिळते.

Sr.No	Program	Program Objectives	Program Specific Outcomes
2.	२०१ शारीरीक शिक्षणातील आरोग्य शिक्षण आणि मनोरंजन व खेळ	१.शारीरीक शिक्षणातुन आरोग्य विषयक माहिती देणे. २.शारीरीक शिक्षणातुन विद्यार्थ्यांचे मनोरंजन करणे. ३.खेळाविषयी आवड निर्माण करणे. ४.मनोरंजनातुन विद्यार्थ्याचे मानसीक जडणघडण करणे.	१.आरोग्य चांगले ठेवले जाते. २.विद्यार्थ्यांचे मनोरंजन होते. ३.मनोरंजनातुन मानसिक तनाव दुर केला जातो. ४.मनोरंजनातुन सामाजिक विकास होतो.
	B.A.S.Y २०२ शारीरीक शिक्षणातील पंचगिरी, मार्गदर्शन पध्दती आणि खेळ	१.पंचगिरीचे महत्व सांगणे. २.पंचाचे कार्य सांगणे. ३.मार्गदर्शकाची तत्वाची माहीती देणे. ४.मार्गदर्शकाच्या पध्दतीविषयी ज्ञान देणे.	१.पंचगिरीचे महत्व लक्षात ठेवले जाते. २.पंचाच्या कार्याविषयी माहिती मिळते. ३.मार्गदर्शकाच्या तत्वाची माहिती मिळते ४.मार्गदर्शकाच्या पध्दतीची माहिती मिळते.
	२०३ शारीरीक शिक्षण प्रात्यक्षिक	१.मुलांना मैदानावर आणने. २.वेगवेगळा खेळ खेळण्यास प्रवृत्त करणे. ३.व्यायामाची सवय लावणे. ४.प्रत्येक खेळच्या कौश्यल्याची प्राप्ती करणे.	१.मैदानावर खेळ खेळण्यास प्रवृत्त होतात. २.कौशल्याचे ज्ञान मिळते. ३.व्यायामाची सवय लागते. ४.शारीरीक विकास होतो.

Sr.No	Program	Program Objectives	Program Specific Outcomes
3.	B.A.T.Y ११३ प्राचिन भारताचा शारीरीक शिक्षणाचा इतिहास	१.आर्यकालीन शारीरीक शिक्षणाविषयी माहिती देणे. २.वैदिक काळातील शारीरीक शिक्षणा –विषयी माहिती देणे. ३.वैदिक काळातील शारीरीक शिक्षणा –विषयी महत्व सांगणे. ४.आर्यकाळातील शारीरीक शिक्षणा– च्या उद्दीष्टांची माहिती देणे.	१.आर्यकालीन शारीरीक शिक्षणाविषयी –चे ज्ञान मिळते. २.वैदिक काळातील शारीरीक शिक्षणा– विषयीचे ज्ञान मिळते. ३.आर्यकालीन शारीरीक शिक्षणाचे महत्व कळते. ४.आर्यकालीन शारीरीक शिक्षणाच्या उद्दीष्टांची माहिती मिळते.
	B.A.T.Y ११४ शारीरीक शिक्षणाचा अधुनिक इतिहास	१.बौद्ध काळातील शारीरीक शिक्षणा– विषयी माहिती देणे. २.अधुनिक काळातील शारीरीक शिक्षणाविषयी माहीती देणे. ३.जैन काळातील शारीरीक शिक्षणा विषयी माहिती देणे. ४.प्राचिन व अधुनिक काळातील शारीरीक शिक्षणाचे महत्व पटवुन देणे.	१.बौद्ध काळातील शारीरीक शिक्षणाची माहिती मिळते. २.जैन काळातील शारीरीक शिक्षणा विषयी माहिती मिळते. ३.अधुनिक काळातील शारीरीक शिक्षणाविषयी माहिती मिळते. ४.प्राचिन व अधुनिक काळातील शारीरीक शिक्षणातील महत्व कळते.
	B.A.T.Y Main ११५ शारीरीक शिक्षणातील आरोग्य व प्रथमोपचार	१.प्रथमोपचाराची माहिती देणे. २.व्यसनमुक्ती विषयी मार्गदर्शन करणे. ३.काविळ,मलेरिया,विषयी माहिती देणे. ४.रक्तदाबाविषयी माहीती देणे.	१.जखमी खेळांडुंना प्रथमोपचाराविषयी माहिती मिळते. २.व्यसनाचे परिणाम लक्षात येतात. ३.काविळ, मलेरिया या सारख्या रोगांचे निर्मुलन कसे करावे या विषयी माहिती मिळते. ४.रक्तदाबाचे परिणाम काय होतात या विषयी माहिती मिळते.
	B.A.T.Y Main ११६ प्रात्यक्षिक	१.विद्यार्थी मैदानावर आणने. २.खेळाविषयी आवड निर्माण करणे. ३.खेळातील कौशल्य प्राप्त करणे. ४.खेळातुन सहकार्याची भावना वाढिस लागणे. ५.राष्ट्रप्रेम निर्माण करणे.	१.मैदानावर येण्याची सवय लागते. २.खेळाविषयी आवड निर्मान होते. ३.सहकार्याची भावना वाढिस लागते. ४.राष्ट्रप्रेम निर्माण होते.

MSP Mandals

Sunderrao Solanke Mahavidyalaya Majalgaon

Department of Commerce

Year: 2019-20

2. Programs offered

Sr. No.	Programs	Programme Outcomes	Programme Specific Outcomes
1	**Bachelor of Commerce (B.Com)**	PO1. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology. PO2.Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings. PO4.Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them. PO5.Environment and Sustainability: Understand the	**F.Y. B.Com:** **Financial Accounting :** 1. To impart the knowledge of various accounting concepts 2. To instill the knowledge about accounting procedures, methods and techniques. 3. To acquaint them with practical approach to accounts writing by using software package. **Business & Industrial Economics:** 1. To expose Students of Commerce to basic micro economic concepts and inculcate an analytical approach to the subject matter. 2. To stimulate the student interest by showing the relevance and use of various economic theories. 3. To apply economic reasoning to problems of business 4) To study the basic concepts of Industrial Economics. 5) To study the significance and problems of Industrialization. 6) To study the impact of Industrialization on Indian Economy. **Business Mathematics and Statistics :**

		issues of environmental contexts and sustainable development. PO6.Self-directed and Life-long Learning: Acquire the ability to engage in independent and lifelong learning in the broadest context socio-technological changes	1. To prepare for competitive examinations 2. To understand the concept of Simple interest, compound interest and the concept of EMI. 3. To understand the concept of shares and to calculate Dividend 4. To understand the concept of population and sample. 5. To use frequency distribution to make decision. 6. To understand and to calculate various types of averages and variations. 7. To understand the concept and application of profit and loss in business. 8. To solve LPP to maximize the profit and to minimize the cost. 9. To use correlation and regression analysis to estimate the relationship between two variables. 10. To understand the concept and techniques of different types of index numbers. **Computer Application in Business** 1. To acquaint the students with the application of Computers. 2. To develop the capability of students for knowing Computer & Computer operations. 3. To make the students aware of Computer Software's. 4. To give thorough knowledge of Computer Fundamentals. 5. To enlighten the students regarding the new concepts introduced in the Computing. **Entrepreneurship**

			Development: 1) General Objective of the Paper. a) To create awareness about Entrepreneurship 2) Core Objectives of the paper. a) To understand the basic concept of Entrepreneurship b) To understand Entrepreneurship Culture & motivating students for self-employment. c) To know the relevance of Entrepreneurship in 21st century. d) To develop an analytical ability to plan for various marketing strategy. **S.Y. B.COM** **Information Technology & its Application in Business:** 1. To understand basic concepts of Tally ERP9 2. To understand the accounting process in tally 3. To provide hands on training in tally. 4. To develop business accounting skill among the students. **Corporate Accounting**: To enable the students to develop awareness about Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards. 1. To make aware the students about the conceptual aspect of corporate accounting 2. To enable the students to develop skills for Computerized Accounting

			Principles of Business Management: 1. To provide basic knowledge & understanding about business management concept. 2. To provide an understanding about various functions of management. **Business Regulatory Framework:** 1) To impart students with the knowledge of Business related acts. 2) To update the knowledge of provisions of sales act, contract act, consumer protection act etc. 3) To apprise the students of new concepts involving in business related acts. 4) To impart students the provisions and procedures under business related acts. **Marketing Management:** 1) General Objective of the Paper. a) To create awareness about market and marketing. b) To establish link between commerce/Business and marketing. 2) Core Objectives of the paper. a) To understand the basic concept of marketing. b) To understand marketing philosophy and generating ideas for marketing research. c) To know the relevance of marketing in modern competitive world. d) To develop an analytical ability to plan for various marketing strategy.

			<u>T.Y.B.COM</u> **Advanced Accounting.** To impart the knowledge of various accounting concepts To instill the knowledge about accounting procedures, methods and techniques. To acquaint them with practical approach to accounts writing by using software package. **Banking and Insurance:** [Fundamentals of Banking] 1. To acquaint the students with the fundamentals of banking & insurance. 2. To develop the capability of students for knowing banking & insurance concepts and operations. 3. To make the students aware of banking business and practices. 4. To give thorough knowledge of banking & insurance operations. 5. To enlighten the students regarding the new concepts introduced in the Banking & Insurance Sector. **Direct & Indirect Tax:** 1. To get knowledge about preparation of Audit report. 2. To understand the basic concepts and to acquire knowledge about Computation of Income, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961. **Auditing** : The Study of Various Components of this course will

			enable the students: 1. To acquaint themselves about the concept and principles of Auditing, Audit process, Assurance Standards, Tax Audit, and Audit of computerized Systems. **Cost Accounting :** 1. To provide Knowledge about the concepts and principles application of Overheads 2. To provide also understanding various methods of costing and their applications 3 To impart knowledge regarding costing techniques. 4 To provide training as regards concepts, procedures and legal Provisions of cost audit. **Management Accounting** The objective of the course is to enable students to acquire sound Knowledge of concepts, methods and techniques of management accounting and to make the students develop competence with their usage in managerial decision making and control. Strategic Management To understand the approaches to Strategic Decision Making,
2	**Master of Commerce (M.Com)**	PO1.Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the	**M.COM F.Y. (I SEM)** **Management Process & Organizational Behavior:** 1. To provide basic knowledge & understanding about business management concept. 2. To provide an

		degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives. PO2. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology. PO3.Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings. PO4.Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in	understanding about various functions of management. 3. To understand the human behavior in organizational culture. **Managerial Economics:** 1) To study the basic concepts of Managerial Economics. 2) To study the significance and problems of Industrialization. 3) To study the impact of Industrialization on Indian Economy. **Corporate Financial Accounting:** 1. To update subject knowledge among the students at corporate level. 2. To inculcate the skill of managing the finance of corporate houses. 3. To make them able to analyze financial statements of companies. **Business Environment:** 1. To make the students understand the various aspects of business environment & their impact on industry, international trade. **M.COM F.Y. (II SEM)** **Advanced Cost Accounting :** 1. To provide Knowledge about the concepts and principles application of Overheads 2. To provide also understanding various methods of costing and their applications 3 To impart knowledge regarding costing techniques. 4 To provide training as regards concepts, procedures

		civic life through volunteering. PO5.Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them. PO6.Environment and Sustainability: Understand the issues of environmental contexts and sustainable development. PO7.Self-directed and Life-long Learning: Acquire the ability to engage in independent and lifelong learning in the broadest context socio-technological changes	and legal Provisions of cost audit. **Strategic Management** To understand the approaches to Strategic Decision Making, Strategic Management Process. **Marketing Management** 1) General Objective of the Paper. a) To create awareness about market and marketing. b) To establish link between commerce/Business and marketing. 2) Core Objectives of the paper. a) To understand the basic concept of marketing. b) To understand marketing philosophy and generating ideas for marketing research. c) To know the relevance of marketing in modern competitive world. d) To develop an analytical ability to plan for various marketing strategy **M.COM S.Y. (III Sem.)** **Research Methodology:** 1. To expose the students with research process, data collection & analysis, sampling, report writing etc. 2. To well acquaint the student with tools & techniques of research methodology. **Human Resource Planning & Development:** 1. To expose students to the human resource planning

			methodologies & the various aspects of HR Practices. **Business Legislation:** 1. To update knowledge about different business legislation in practice such as company act 1956, share capital, company management, security market (SEBI) act 1992 & consumer protection act 1986. **International Marketing:** 1. To make the students understand the importance of international marketing, entry strategies, foreign market selection, product development & distribution. **M.Com (IV Sem.)** **Quantitative Techniques:** 1. To make the student aware of quantitative techniques for data analysis & financial decision making. **Securities Analysis:** 1. To update the students' knowledge among the students at corporate level about securities & portfolio management. **Research Project:** 2. To help the students to prepare research project on various topics which in turn help to inculcate research aptitude among the students. **Advertising:** 1. To expose students to the advertising basics & the various methodologies to develop, implement &

			measurement the effect of advertisement.
3	**Diploma in Tax Assistance (D.T.A.)**	PO1. To acquire expert knowledge of practical and procedural aspects relating to Tax Laws PO2. The objective of the program is to produce professionally trained learners to be associated Tax Laws and Practice. PO3. To provide a platform of self-employability as learners after successful completion can start professional practice as Tax Consultant. PO4. To acquire knowledge of newly emerged era of GST PO5. To acquaint the students with basic concepts of accounting and accounting standards & develop the skills of using accounting equation in processing business transactions. PO6. To make students understand & apply English & Marathi grammar while communicating at working place.	**Semester-I** **Linguistic Proficiency** CO1**.** To Well Acquaint students with English & Marathi language proficiency. CO2. To make students understand & apply English & Marathi grammer while communicating at working place. Fundamentals of Accounting CO1. To familiarize the students with accounting as an information system; CO2. To acquaint the students with basic concepts of accounting and accounting standards & develop the skills of using accounting equation in processing business transactions; CO3.To develop an understanding about recording of business transactions and preparation of financial statements; CO4. To develop a skill of using Excel & DBMS for generating various type of accounting information. Financial Mathematics CO1. To help student to understand the mathematical calculations required in the normal course of life and to create understanding about the basic mathematics used in investment and financial matters. **Direct Tax** CO1. To create understanding about the basic structure

		PO7. To know the need of business ethics while working in the organizational setup as a professional.	of direct tax in India CO2. To help students to understand the provisions of direct tax and to calculate income under different heads of income. COMPUTARISED ACCOUNTING-I CO1. To make students familiar with the computerised accounting software and help them to understand the application of accounting software in recording business transactions. **Semester-II** **Business Communication** CO1. To make students understand the basics of business communication CO2. To make them assure about the importance of listening & writing in business communication. CO3. To make them understand how to write letters, face interviews etc. **Moral Values & Professional Ethics** CO1. Clarify personal & professional values and recognize their impact on decision & professional behavior CO2. To appreciate ethical dilemma while discharging duties in professional life. CO3. To know the need of business ethics. CO4. To aware of the need of corporate & Social

			responsibility. **Computer Application & Business** CO1. To make students understand the application of computer in business practices. GOODS & SERVICE TAX CO1. To make students understand the structure of Goods & Service Tax and its compliance. CO2. To help students to understand GST accounting, GST returns & other GST practices. COMPUTARISED ACCOUNTING-II CO1. To make students familiar with the computerised accounting software and help them to understand the application of accounting software in recording business transactions.