

MES ABASAHEB GARWARE COLLEGE, PUNE

Criteria II(2.6.1): Course Outcomes

Subject	Program and Course	Course Outcomes
Biodiversity		
	M.Sc. I	• Identification skills for plants and animals
		• Hands on training of field work and lab work
		• Bridging the gap between field and lab work
		• Inculcating interdisciplinary approach in students
	M.Sc. II	• Application of biodiversity
		• Problem solving approach for conservation issues
		• Networking through guest lectures, dissertations
		• Documentaries by the students
Biotechnology		
	F.Y.B.Sc.	
	Fundamentals of Chemistry	<ul style="list-style-type: none"> To learn concepts of thermodynamics, stereochemical aspects of molecules, orientation in molecules and concepts of electrochemistry.
	Fundamentals of Physics	<ul style="list-style-type: none"> To learn basic concepts of laws of physics which is helpful to give reasons behind different processes in life science.
	Biosciences	<ul style="list-style-type: none"> Zoology- Differentiate between different phyla of animals, Understand the structure of different tissue types and relate to their functions, Describe the morphology and anatomy of mouth parts and social organization of honey bees, Understand the basic concepts of parasitology, host-parasite relationship, lifecycles of parasites, Understand methods of- Vermiculture, Aquaculture, Sericulture and Apiculture
	Mathematics and Statistics	<ul style="list-style-type: none"> Learn the concepts for implementation of mathematics and stats. in analysis of various methods using quantitative models.
	Fundamentals of Biological Chemistry	<ul style="list-style-type: none"> Biochemistry introduces the fundamental biomolecules which constitute the living organism. Describes how the remarkable properties of the living organism arise due to interaction between these organic molecules and their cellular organization.
	Biophysics and instrumentation	<ul style="list-style-type: none"> learn different techniques such as spectroscopy, microscopy, pH meter etc, and its use in life science
Microbiology	<ul style="list-style-type: none"> learn concepts of microbiology and different staining, aseptic and cultivation techniques to observe these microorganisms 	

	Use of Computer	<ul style="list-style-type: none"> To learn basic concept of computers and its use and application in data storage and in research field.
	Practicals in Chemistry and biochemistry	<ul style="list-style-type: none"> The course delivers basic knowledge of units, pH, concentration through preparation of solution and buffers. <p>Understand chemical reactions based on functional groups of biomolecules which are used in spot test.</p> <ul style="list-style-type: none"> Learn the use of colorimeter and Lambert Beer's law
	Practical in physics, biophysics and Instrumentation	<ul style="list-style-type: none"> Basic knowledge of least count of various instruments, chromatography technique. Understand different laws using colorimeter and spectroscopy
	Practical in Basic biosciences	<ul style="list-style-type: none"> Dissect honey bee sting and mouth parts, Identify Fascicle and Plasmodium signet ring stage, recognize Drosophila mutants and lifecycle stages. Plant Science: Introduction to basic morphology and anatomy of angiosperms, Study of plant physiological experiments. Preparation of herbarium.
	Quantitative Methods in Biology	<ul style="list-style-type: none"> Learn different tests of hypothesis and representation of outcomes by analyzing the methods.
	S.Y.B.Sc.	
	Genetics and Immunology	<ul style="list-style-type: none"> Understanding Mendel's genetics, inheritance patterns, mutations, bacterial DNA transfer, Operon systems, Transposable elements in prokaryotic and eukaryotic systems, population genetics
	Cell biology	<ul style="list-style-type: none"> Understand structure-function relationships of cell organelles, Describe plasma membrane and the different endomembrane systems, transport mechanisms within the cell and across plasma membrane, Understand cellular architecture, Understand mechanisms of cell division and its regulation, cell death and neoplasia.
	Environmental Biology and Biotechnology	<ul style="list-style-type: none"> Develop a basic understanding and awareness about the concepts of the constituent parts of the environment, soil, air and water ecosystems and the principles of biodiversity.
	Practicals in Environmental Biotechnology	<ul style="list-style-type: none"> Learn methods in physical, chemical, biochemical and microbial analysis of soil and water samples, genotoxic and cytotoxic effects of water pollution, biodiversity of terrestrial and aquatic ecosystems and Geographical Information Systems.
	Practicals in Cell Biology & Genetics	<ul style="list-style-type: none"> Measure cell sizes, Isolate cell organelles and confirm their presence, Dissect salivary gland chromosomes, Perform blood grouping, Identify different stages of mitosis and meiosis, Solve genetics problems in Mendelian inheritance, Perform karyotype analysis
	Molecular biology	<ul style="list-style-type: none"> Understand the structure of- DNA double helix,

		<p>different RNAs,</p> <ul style="list-style-type: none"> Describe Genome organization, DNA replication, transcription and translation, Understand the genetic code, Understand mechanisms of mutation and DNA repair
	Animal and Plant development	<ul style="list-style-type: none"> Animal Development: students will understand basic process of fertilization of egg and eventually how complexity is generated during development of an organism.
	Scientific writing and communication	<ul style="list-style-type: none"> Prepare a CV, Prepare oral and written presentations, Understand the process of writing a research paper/review article, Understand the meaning of journal impact factor and citation index
	Metabolic Pathways	<ul style="list-style-type: none"> Understand various co-ordinated reaction taking place in body. The Course delivers knowledge about carbohydrate and fatty acid metabolism with overview of aminoacid metabolism. Learn the concept of enzyme kinetics and regulation,
	Practicals in Molecular biology	<ul style="list-style-type: none"> Isolate DNA from prokaryotic and eukaryotic sources, Estimate protein concentration by different methods, Carry out agarose gel electrophoresis, Carry out SDS-PAGE
	Practicals in Developmental biology	<ul style="list-style-type: none"> Understand basic development in different model organisms by observing permanent slides and preparing temporary mounts of chick embryos Plant Development: understanding microsporogenesis, male and female gametophyte development, dicot and monocot embryogenesis, Study of various tissues and cell types, Study of SAM and RAM
	T.Y.B.Sc.	
	Microbial Biotechnology	<ul style="list-style-type: none"> Understand applications of microbiology in the different fields like industry, food and dairy, water purification, agriculture medical, and molecular biology
	Plant and animal tissue culture	<ul style="list-style-type: none"> ATC: students will get basic knowledge of in vitro culturing and propagation of animal cells PTC- Understanding principles of PTC, media composition, Study of various culture types including organ culture, cell culture etc. applications of PTC
	Biodiversity & Systematics	<ul style="list-style-type: none"> Introduce to the animal, plant and microbial biodiversity and interaction between them. Learn the conservation tools and acts regarding the conservation of the biodiversity
	Practicals in Microbial biotechnology	<ul style="list-style-type: none"> Learn isolation and identification of microorganisms, detection of pathogen in water, aflatoxins in food et

	B Practicals in Field studies and report writing	<ul style="list-style-type: none"> • Students through field visit conduct biodiversity analysis of place in relation with plant and butterfly diversity. • learn skill sets required by data analysis and report writing
	Practicals in tissue culture	<ul style="list-style-type: none"> • Understand the basic technique of culturing and maintenance of animal cells under in vitro conditions • PTC: Hands on experience on stock preparations, media preparation, Surface sterilization, Initiation of callus, axillary bud, anther, seed cultures. • Study growth parameters of cell suspension culture.
	Large scale Manufacturing process	<ul style="list-style-type: none"> • Students learn different aspects large scale manufacturing process and can correlate the difference between lab scale manufacturing process
	Biochemical and biophysical techniques	<ul style="list-style-type: none"> • introduced to the chemical and physical concept underlying various analytical techniques like microscopy, centrifugation, spectroscopy , basic chromatography and electrophoresis
	Recombinant DNA Technology	<ul style="list-style-type: none"> • understand the techniques to generate recombinant DNA, DNA sequencing and their applications
	Techniques in Genetic Engineering	<ul style="list-style-type: none"> • Students will have knowledge of basic techniques of DNA isolation and manipulations
	Practicals of large scale manufacturing process	<ul style="list-style-type: none"> • students understood upstream and downstream process of different industrial product
	B Practicals in biochemical and Biophysical techniques	<ul style="list-style-type: none"> • Students learn importance of biosafety, preparation of various reagents and buffer, • Learn the use of analytical techniques like TLC, paper chromatography and native electrophoresis
	M.Sc. I	
	Advanced Biological Chemistry	<ul style="list-style-type: none"> • detailed understanding of protein biochemistry, secondary metabolites and how their functions is governed by their structures.. • helps in understanding the applications of enzymes and secondary metabolites in biological field.
	Molecular Biology	<ul style="list-style-type: none"> • The students should understand the basic structure and function of bio-molecules and the principles underlying the process of gene expression in life forms.
	Environmental Biotechnology	<ul style="list-style-type: none"> • Students develop a basic understanding and awareness about the concepts of the constituent parts of the environment, soil, air and water ecosystems and the principles of biodiversity.
	Cell Biology	<ul style="list-style-type: none"> • Understand molecular mechanisms of intracellular transport, cell communication and cell signaling, • Describe mechanisms of cell death, cell differentiation and cancer
	Exercises in Advanced Biological Chemistry	<ul style="list-style-type: none"> • Helps students to understand the process of enzyme extraction, purification and enzyme kinetics through practical based on various isolation and purification techniques
	Exercises in Molecular and Cell Biology	<ul style="list-style-type: none"> • Students learn to isolate, analyze and quantify cell organelles like nuclei, mitochondria, lysosomes, and

		biomolecules like RNA, Histone proteins
	Exercises in Environmental Biotechnology	<ul style="list-style-type: none"> Students develop a better understanding of the methods used for soil and water analysis, studying genotoxic and cytotoxic effects of water pollution, Biochemical and chemical oxygen demand and Geographical Information Systems.
	Genetic Engineering	<ul style="list-style-type: none"> Students develop an approach towards applications of molecular biology techniques in developing recombinant molecules, genetically modified organisms, plant and animal biotechnology. Students learn concepts underlying advanced molecular biology techniques like Polymerase Chain Reaction, Southern, Northern, Western hybridization, Immunological and functional screening methods for genomic and complementary DNA libraries.
	Immunology	<ul style="list-style-type: none"> Students able to understand the basic principle behind the immunodiagnostic technique
	Principles of Bacteriology and Virology	<ul style="list-style-type: none"> help students to understand the basic concepts of bacterial and viral classification, structure and pathology
	Plant Biotechnology	<ul style="list-style-type: none"> helps the student to understand the principle of micropropagation, gene transfer methods and transgenic plant.
	Exercises in Genetic Engineering	<ul style="list-style-type: none"> Students learn to perform and analyze recombinant DNA protocols like plasmid isolation, bacterial transformation, DNA fingerprinting, PCR, Southern and Northern Hybridization.
	Exercises in Immunology	<ul style="list-style-type: none"> Learn the technique some immunodiagnostic procedure including ELISA, WIDAL. Also learn antigen antibody interaction
	Exercises in Plant Biotechnology	<ul style="list-style-type: none"> Initiation and maintenance of callus, cell suspension culture, protoplast isolation and fusion technique, Hairy root induction using Agrobacterium rhizogenes, Somatic embryogenesis, Spirulina culture, Androgenesis
	Exercises in Bacteriology and Virology	<ul style="list-style-type: none"> Students learn to isolate viruses in embryonated eggs, virus titration, bacterial isolation, identification and staining technique
	M.Sc. II	
	Animal Biotechnology	<ul style="list-style-type: none"> Students will understand importance of in vitro culturing of cells, genetic manipulations of cells as well as organisms to generate transgenic animals, their applications. Also to make students aware about role of biotechnology in improving life stock breeding.
	Bioprocess engineering & Fermentation Technology	<ul style="list-style-type: none"> Student able to understand mechanism of working of various parts of fermenter. Also to understand major downstream procedure for various biochemicals. They also learn the principle of sewage treatment
	Advanced Genetics	<ul style="list-style-type: none"> Study of genetics of inbreeding, somaclonal variations, medical genetics, clinical significance of

		genetic studies, androgenesis, Model systems used in genetic studies
	Bioinformatics	<ul style="list-style-type: none"> Students learnt basics of bioinformatics, different databases, tools and software's packages which are been highly used in various applied field of biotechnology.
	Exercises in Animal Biotechnology	<ul style="list-style-type: none"> Students will understand the basic technique of cell culture establishment, subculturing and maintenance under in vitro conditions
	Exercises in Bioprocess Engineering	<ul style="list-style-type: none"> Student learns to optimize parameters for fermentation process, culture preservation, enzyme assay and recovery of some fermented product.
	Exercises in Bioinformatics	<ul style="list-style-type: none"> Students got to learn about distinct biological databases, protein structure visualisation, phylogeny determination, homology modeling and their application in the biotechnology.
	Scientific Research and Communications	<ul style="list-style-type: none"> The course equips students with an understanding regarding scientific communication, its types, methods, guidelines, research and science communication ethics, importance of Intellectual Property Rights and Patenting.
	Genomics and Proteomics	<ul style="list-style-type: none"> Students learnt various techniques used in genomics and proteomics, analysing tools, methods to carry out genome and proteome studies as well as their application in all the applied fields of biology.
	Biochemical and biophysical techniques	<ul style="list-style-type: none"> Students learn different techniques used for analysis, isolation and purification of biomolecules. learn chemical and physical concepts associated with these techniques. expected to know the techniques based on electrophoresis, spectroscopy, microscopy, chromatography, histochemical and immunological techniques.
	Exercises in Biochemical and Biophysical	<ul style="list-style-type: none"> Gain practical knowledge and hands on experience on affinity, ion exchange and size exclusion chromatography, also on the techniques like 2D electrophoresis, fluorescence microscopy and ELISA
	Stem Cell Technology	<ul style="list-style-type: none"> students will learn basic concepts about stem cells, types and their therapeutic applications
	Project	M.Sc (Biotechnology) students are assigned projects either at the department of Biotechnology (In-House) or at SPPU departments or research Institutes like NCL, IISER, MCC, IBB at Pune. Through projects, students learn to systematically survey literature, collect information, formulate hypothesis, design and conduct experiments, collect and analyze data, prepare project reports and presentations.
Botany		
F.Y.B.Sc.		
		<ul style="list-style-type: none"> foundation courses w.r.t. plant diversity, physiology cell biology and molecular biology

		to develop clear basic concepts.
		<ul style="list-style-type: none"> To make students aware of the importance of botany in day to day life.
	S.Y.B.Sc.	
		<ul style="list-style-type: none"> Get familiar with basics of ecological studies. Understanding of food chain, food web difference and importance
		<ul style="list-style-type: none"> To create awareness w.r.t. protection and conservation of our environment
		<ul style="list-style-type: none"> Based on learning at F.Y.B.Sc. level, the concepts are learnt in certain depth to know the mechanisms at various levels and their applications.
	T.Y.B.Sc.	
		<ul style="list-style-type: none"> to develop scientific attitude and reasoning capacity
		<ul style="list-style-type: none"> to prepare foundation for the entry in University departments for post graduation as well as various competitive examinations and jobs related to life science
		<ul style="list-style-type: none"> acquire skills related to laboratory work and field work.
		<ul style="list-style-type: none"> Become aware about conservation and sustainable use of biodiversity
B. Voc. Humanities		
	M.A in Mass Communication and Journalism Part-I and Part-II	<ul style="list-style-type: none"> To understand the process of communication, dissemination and language. Gather, analyze and create information on contemporary issues for print, broadcast and other digital media. Write and edit graceful, grammatically correct prose for a news story/copy Analyze numerical data and utilize databases for multi-layered storytelling. Use reliable visual aids to tell stories ethically. Demonstrate an awareness of journalism as an ethical practice. Demonstrate preparation for an entry-level position in the profession through a portfolio exhibiting their work. To encourage students to carry out further Research activities.

B. Voc. Interdisciplinary		
	F.Y B.Voc Mass Communication/ Media convergences	<ul style="list-style-type: none"> • Students will be able to make effective oral presentations on a variety of topics in public settings. • Students will be able to apply basic and advanced human communication theories and models to academic and professional situations. • Students will be able to make effective business and professional presentations to internal and external audiences.
	S.Y B.Voc Mass Communication/ Media convergences	<ul style="list-style-type: none"> • Event management Skills are introduced • Radio and Television anchoring skills are introduced • Photographic and video recording skills are introduced.
	T.Y B.Voc Mass Communication/ Media convergences	<ul style="list-style-type: none"> • Film and documentary making skills are introduced • Theater and Craft skills are introduced • Assignments and projects make students ready for entry level jobs in media houses • To encourage them to peruse Post Graduation in concern fields.
B. Voc. Beauty Wellness		
	F.Y B.Voc Beauty Wellness	<ul style="list-style-type: none"> • Students effectively make oral as well as PPT presentations • Basic Concept of Beauty and Hair are introduced effectively • NSQF entry level -4 knowledge is provided • Students get effectively ready for entry level job in salon and spa • Able to conceptualize, implement and evaluate the functions, metabolism, requirements and effects of deficiency of nutrients. • Understand the role of food and nutrients in health and disease prevention. • Development of a balanced diet to improve the general wellness of an individual.
	S.Y B.Voc Beauty Wellness	<ul style="list-style-type: none"> • Advance Skin and Hair Knowledge Provided • Students can independently work as Skin Therapist and Hair Stylist • Basic and advance make up Knowledge provided students work as make Up artist • Introduction to Herbal cosmetology • Herbal product development effectively carried

		<p>out</p> <ul style="list-style-type: none"> • Understand the concept, purpose and principles of diet therapy and role and types of dietitians • Gain knowledge on the etiological factors and complications, assessment parameters and dietary modifications in obesity and underweight
	T.Y B.Voc Beauty Wellness	<ul style="list-style-type: none"> • Students can effectively handle Clients • Students are industry ready for beauty councilor and Hair artist level job. • Students get introduced to Naturopathy and Yoga thus further increase their educational scope in the fields of Naturopathy and yoga. • To encourage students to peruse further education in concerned fields.

Psychology

	FYBA G1: General Psychology	<ul style="list-style-type: none"> • 1. Understand the basic principles of Psychology.
		<ul style="list-style-type: none"> • 2. Comprehend the historical trends in psychology, major concepts, theoretical Perspectives and empirical findings.
		<ul style="list-style-type: none"> • 3. Get an overview of the applications of Psychology.
		<ul style="list-style-type: none"> • 5. Understand the importance of better mental health in life.
	SYBA G2: Social Psychology	<ul style="list-style-type: none"> • 1. Understand the basic concepts, methods and theories in social Psychology
		<ul style="list-style-type: none"> • 2. Comprehend the process of attitude formation.
		<ul style="list-style-type: none"> • 3. Realize the nature, causes and prevention of aggression
		<ul style="list-style-type: none"> • 4. Understand the causes and Consequences of group behavior
	SYBA S-1: Abnormal Psychology	<ul style="list-style-type: none"> • Acquaint with DSM-5 and ICD -10 and recent classification of abnormality.
		<ul style="list-style-type: none"> • Acquire the knowledge about the causes, symptoms and treatments of various types of psychological disorders.
		<ul style="list-style-type: none"> • Familiarize with the list of perspectives of Psychopathology.
	SYBA S-2: Positive Psychology	<ul style="list-style-type: none"> • Understand what Positive Psychology is.
		<ul style="list-style-type: none"> • Realize the importance of well-being at different stages of life.
		<ul style="list-style-type: none"> • Get acquainted with Happiness and Positive Traits

		of Personality.
	TYBA G3: Industrial and Organizational Psychology	<ul style="list-style-type: none"> 1. Comprehend the emergence of Industrial and Organizational Psychology.
		<ul style="list-style-type: none"> 2 Get acquainted with the work done in Industrial and Organizational Psychology.
		<ul style="list-style-type: none"> 3 Understand the significance of training, performance appraisal, leadership models.
		<ul style="list-style-type: none"> 4 Realize the importance of Engineering Psychology.
	TYBA S-3 :Scientific Research and Experimental Psychology	<ul style="list-style-type: none"> Get acquainted with the basic concepts of experimental psychology and research methodology.
		<ul style="list-style-type: none"> Orienting students with the spirit of inquiry in research.
		<ul style="list-style-type: none"> Acquire skill of generating ideas for research, hypotheses and operational definitions of variables.
		<ul style="list-style-type: none"> Understand basic steps in scientific research.
		<ul style="list-style-type: none"> Familiarize with basic information and knowledge about test-administration and scoring, and interpretation of the obtained results.
		<ul style="list-style-type: none"> Ability to undertake an independent small-scale research project.
	TYBA S-4: Psychology Practical: test and experiments	<ul style="list-style-type: none"> Familiarize with the use of elementary statistical techniques.
		<ul style="list-style-type: none"> Ability to administer and score psychological tests and interpret them.
		<ul style="list-style-type: none"> Acquaint with the basic procedure and design of Psychological experiments.
		<ul style="list-style-type: none"> Learn to undertake a small-scale research project.
		<ul style="list-style-type: none"> Ability of practical application of theories and perspectives in Psychology through study tour and visits.
		<ul style="list-style-type: none"> Encourage students to learn practical application through study tour and visit.
	MA-1	
	MA-1: Cognitive psychology: understanding	<ul style="list-style-type: none"> Comprehend the origin of cognitive psychology.
		<ul style="list-style-type: none"> Acquire the knowledge of cognitive psychology.
		<ul style="list-style-type: none"> Familiarize with recent trends in cognitive psychology.
		<ul style="list-style-type: none"> Ability to relate subject matter of cognitive psychology to daily life.

	Psychometrics: The science of psychological assessment	<ul style="list-style-type: none"> Critically understand the measurement issues and techniques in psychological inquiry.
		<ul style="list-style-type: none"> Develop skills and competencies in test construction and standardization.
		<ul style="list-style-type: none"> Understand the various biases in psychological testing and assessment.
	Research methodology-I (Issues and essential techniques in statistics and experimental design)	<ul style="list-style-type: none"> Familiarize with the basics of scientific research in applied psychology
		<ul style="list-style-type: none"> Acquire with statistical rigors in designing research and processing data.
	Psychology Practical: Testing	<ul style="list-style-type: none"> Skill to administer the standardized psychological tests, establish rapport, interpret scores and write report.
		<ul style="list-style-type: none"> Understand the criteria of evaluating the psychological tests.
		<ul style="list-style-type: none"> Acquire certain counseling skills on the basis of psychological results.
	Cognitive Psychology: Advances And Application	<ul style="list-style-type: none"> Understand the advances in cognitive psychology
		<ul style="list-style-type: none"> Skill to apply cognitive Psychology in different fields.
	Psychometrics: Applications	<ul style="list-style-type: none"> Understand the use of psychological tests for the purpose of assessment, guidance and enhancing the effectiveness of teaching-learning process
		<ul style="list-style-type: none"> Understand the use and interpretation of various psychological tests used in educational field.
		<ul style="list-style-type: none"> Understand the use of psychological tests that are used for better health, adjustment and related counseling
		<ul style="list-style-type: none"> Understand the use of psychological tests in clinical and organizational settings
	Research Methodology-II (Qualitative methods and contemplative practices)	<ul style="list-style-type: none"> Familiarize with about the philosophical foundations, goals and scope of qualitative methodology.
		<ul style="list-style-type: none"> Understand the relationship between paradigms of science and methods of qualitative inquiry.
		<ul style="list-style-type: none"> Acquaint with basic procedures of using qualitative methodology.
		<ul style="list-style-type: none"> Comprehend scientific rigor in the use of qualitative methodology.
		<ul style="list-style-type: none"> Ability to use the statistical rigors in multivariate analysis
	Psychology Practical: Experiments	<ul style="list-style-type: none"> Familiarize with various areas of experimentation in psychology
		<ul style="list-style-type: none"> Skill to conduct experiments in psychology
		<ul style="list-style-type: none"> Ability to apply experimental designs and writing report in standardized styles

	MA-2	<ul style="list-style-type: none"> •
	MA-2: Personality	<ul style="list-style-type: none"> • Acquaint with comprehensive, rigorous and systematic treatment of centrally important theories of personality.
		<ul style="list-style-type: none"> • Ability to observe and interpret individual differences in behaviour in the light of sound theoretical systems of personality.
		<ul style="list-style-type: none"> • Skill to apply the theories of personality in different walks of life.
	Motivation and Emotion	<ul style="list-style-type: none"> • Familiarize with major theories of motivation and emotion.
		<ul style="list-style-type: none"> • Acquire knowledge of biological factors in process of motivation and emotion.
		<ul style="list-style-type: none"> • Understand the importance of positive and negative emotions in human life.
	Psychopathology-I	<ul style="list-style-type: none"> • Familiarize with latest DSM-5 classification of Mental Disorders.
		<ul style="list-style-type: none"> • Understand various paradigms of Psychopathology.
		<ul style="list-style-type: none"> • Ability to identify symptoms and prognosis of different Mental Disorders
	Psychodiagnostics: Procedure And Techniques	<ul style="list-style-type: none"> • Familiarize with Various Psychodiagnostics, procedure & techniques
		<ul style="list-style-type: none"> • Skill to use Different Psycho diagnostic tools.
	Psychotherapies	<ul style="list-style-type: none"> • Familiarize with Various Psychotherapies and its basic procedure.
		<ul style="list-style-type: none"> • Skill to use appropriate psychotherapy in solution of particular problem
		<ul style="list-style-type: none"> • Acquire different psychotherapeutic skills.
	FY B.Sc- Foundations of Psychology	<ul style="list-style-type: none"> • Understand the basic psychological processes and their applications in day to day life
		<ul style="list-style-type: none"> • Develop the ability to evaluate cognitive processes, learning and memory of an individual.
		<ul style="list-style-type: none"> • Understand the importance of motivation and emotion of the individual.
		<ul style="list-style-type: none"> • Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.
	Experimental Psychology	<ul style="list-style-type: none"> • Familiarize with basic concepts of Experimental Psychology.
		<ul style="list-style-type: none"> • 2. Ability to use different methods of psychophysics, learning, reaction time.
		<ul style="list-style-type: none"> • 3. Skill to use psychological tests, intelligence, aptitude and personality

	Psychology Practical: Experiments	<ul style="list-style-type: none"> Acquaint the basic concepts of Experiments in Psychology.
		<ul style="list-style-type: none"> Ability to conduct the experiments and to understand its practical applications.
		<ul style="list-style-type: none"> Familiarize with basic knowledge of elementary statistics
		<ul style="list-style-type: none"> Ability to understand human behavioural and mental processes through experiments.
	Introduction to Social Psychology	<ul style="list-style-type: none"> Familiarize with the basics of social psychology
		<ul style="list-style-type: none"> Comprehend the nature of self, concept of attitude and prejudice of the individual
		<ul style="list-style-type: none"> Acquaint with the interactional processes, love and aggression in our day today life. .
		<ul style="list-style-type: none"> Understand group dynamics and individual in the social world.
	Psychological Testing	<ul style="list-style-type: none"> Familiarize with basics of psychological testing
		<ul style="list-style-type: none"> Skill to assess the human abilities.
		<ul style="list-style-type: none"> Ability to understand and evaluate behaviour analysis.
	Psychology Practical: Tests	<ul style="list-style-type: none"> Familiarize with the basic concepts of Tests in Psychology.
		<ul style="list-style-type: none"> Acquaint about how to administer the tests and to understand its practical applications.
		<ul style="list-style-type: none"> Familiarize with basic knowledge of elementary statistics.
		<ul style="list-style-type: none"> 4. Ability to understand and evaluate human abilities through psychological testing.
Computer Science		
	FYBSc (Computer Science)	
		<ul style="list-style-type: none"> A student will get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
		<ul style="list-style-type: none"> A student will get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.
		<ul style="list-style-type: none"> The students will be able to apply their skills and knowledge, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
		<ul style="list-style-type: none"> The students will be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

		<ul style="list-style-type: none"> The Student will learn basic concepts and terminology in Statistics and basic tools and methods required for data analysis.
		<ul style="list-style-type: none"> Students will be able to understand the concepts and ability to apply statistical tools and techniques.
		<ul style="list-style-type: none"> Student will be well equipped to learn and apply acquired techniques in computer based applications
		<ul style="list-style-type: none"> To get in depth knowledge of scientific and technological aspects of electronics.
		<ul style="list-style-type: none"> To train students in skills related to electronics industry and market.
		<ul style="list-style-type: none"> To familiarize with current and recent technological developments
		<ul style="list-style-type: none"> To enrich knowledge through programs such as industrial visits, hobby projects, market survey, projects etc.
		<ul style="list-style-type: none"> To create foundation for research and development in Electronics
		<ul style="list-style-type: none"> To develop analytical abilities towards real world problems
		<ul style="list-style-type: none"> To develop Problem Solving abilities using computers
		<ul style="list-style-type: none"> To learn basic principles of programming , develop skills for writing programs using 'C'
		<ul style="list-style-type: none"> To understand data processing using computers, basic organization of data using files.
		<ul style="list-style-type: none"> To understand creations, manipulation and querying of data in databases.
		<ul style="list-style-type: none"> Design and implement 'C' programs for simple problems
		<ul style="list-style-type: none"> Understand appropriate use of data types and array structures and appropriate control structures.
	SYBSc(Computer Science)	
		<ul style="list-style-type: none"> Students get sufficient knowledge of fundamental principles, methods and a clear perception of mathematical ideas and tools and know how to use them by modeling, solving, and interpreting.
		<ul style="list-style-type: none"> Students can develop mathematical tools for continuing further study in Computer Science.
		<ul style="list-style-type: none"> Students will be equipped with mathematical modeling abilities, problem solving skills,

		creative talent and power of communication necessary for various kinds of employment
		<ul style="list-style-type: none"> • Make the students familiar with current and recent technological developments in electronics. It enriches knowledge of the students through activities such as industrial visits, seminars, projects etc.
		<ul style="list-style-type: none"> • The students get a foundation for research and development in Electronics.
		<ul style="list-style-type: none"> • To develop analytical abilities towards real world problems.
		<ul style="list-style-type: none"> • To learn the systematic way of solving problem, understand the different methods of organizing large amount of data
		<ul style="list-style-type: none"> • To efficiently implement the different data structures and implement solutions for specific problems.
		<ul style="list-style-type: none"> • To learn fundamental concepts of RDBMS (PL/PgSQL) , database management operations and data security and its importance.
		<ul style="list-style-type: none"> • To learn client server architecture
		<ul style="list-style-type: none"> • Acquire an understanding of basic object oriented concepts and the issues involved in effective class design
		<ul style="list-style-type: none"> • Write C++ programs that use object oriented concepts such as information hiding, constructors, destructors, inheritance etc.
		<ul style="list-style-type: none"> • To teach basics of System Analysis and Design and principles of Software Engineering
		<ul style="list-style-type: none"> • To teach various process models used in practice, and to know about the system engineering and requirement engineering
	TYBSc(Computer Science)	
		<ul style="list-style-type: none"> • To understand the design structure of a simple editor, Assembler and macro processor.
		<ul style="list-style-type: none"> • To understand the working of linkers and loaders and other development utilities.
		<ul style="list-style-type: none"> • To understand Complexity of Operating system as a software
		<ul style="list-style-type: none"> • To understand design issues related to process management, memory management, File management and various related algorithms
		<ul style="list-style-type: none"> • To have an understanding of finite state and pushdown automata, regular languages and context free languages.

		<ul style="list-style-type: none"> To study the Turing machine and classes of problems.
		<ul style="list-style-type: none"> To understand design issues of a lexical analyzer and use of Lex tool ,design issues of a parser and use of Yacc tool
		<ul style="list-style-type: none"> To understand issues related to memory allocation and understand and design code generation schemes
		<ul style="list-style-type: none"> Understand different types of networks, various topologies and application of networks, types of addresses, data communication, and the concept of networking models, protocols and functionality of each layer.
		<ul style="list-style-type: none"> Learn basic networking hardware and tools.
		<ul style="list-style-type: none"> To understand wired and wireless networks, its types, functionality of layer.
		<ul style="list-style-type: none"> To understand importance of network security and cryptography
		<ul style="list-style-type: none"> Students learn Core-PHP, Server Side Scripting Language and PHP-Database handling.
		<ul style="list-style-type: none"> Learn different technologies used at client Side Scripting Language, XML,CSS and XML parsers.
		<ul style="list-style-type: none"> Learn PHP framework for effective design of web application.
		<ul style="list-style-type: none"> Learn JavaScript to program the behavior of web pages.
		<ul style="list-style-type: none"> To learn AJAX to make our application more dynamic
		<ul style="list-style-type: none"> To handle abnormal termination of a program using exception handling ,to create flat files .
		<ul style="list-style-type: none"> To design User Interface using Swing and AWT
		<ul style="list-style-type: none"> To learn database programming using Java , web development concept using Servlet and JSP
		<ul style="list-style-type: none"> To develop a game application using multithreading , socket programming concept
		<ul style="list-style-type: none"> Understanding importance of Object Orientation in Software engineering, components of Unified Modeling Language
		<ul style="list-style-type: none"> Understand techniques and diagrams related to structural modeling , diagrams related to behavioral modeling
		<ul style="list-style-type: none"> Understand techniques of Object Oriented analysis, design and testing
		<ul style="list-style-type: none"> To study how graphics objects are represented in Computer, how graphics system in a computer supports presentation of graphics information.
		<ul style="list-style-type: none"> To study how interaction is handled in a graphics system, how to manipulate graphics object by applying different transformations.

		<ul style="list-style-type: none"> To provide the programmer's perspective of working of computer graphics.
		<ul style="list-style-type: none">
	BCA(Science)	
	F.Y B.C.A (Science) Semester I	
		<ul style="list-style-type: none"> Study basics of Computer System and to learn how to configure computer devices.
		<ul style="list-style-type: none"> Provide a broad overview of problem solving techniques and use of c language programming to solve these problems.
		<ul style="list-style-type: none"> Study of applied Mathematics.
		<ul style="list-style-type: none"> Study of effective communication, Listening Skills, Telephone Skills, Writing Skills, Career Skills, Soft Skills
	F.Y B.C.A (Science) Semester II	
		<ul style="list-style-type: none"> Provide a broad overview of architecture and functioning of computer systems and to learn the basic concepts behind the architecture and organization of computers.
		<ul style="list-style-type: none"> Study of Advanced Programming in C, Applied Mathematics, basics DBMS and SQL.
	S.Y B.C.A (Science) Semester I	
		<ul style="list-style-type: none"> Study the various structures or methods of organizing data in computer's memory and efficiently implement them.
		<ul style="list-style-type: none"> Study of fundamental concepts of RDBMS (PL/Pgsql), database management operations, data security and its importance, client server architecture
		<ul style="list-style-type: none"> To know about software engineering and its application in Software development
		<ul style="list-style-type: none"> Basic networking concepts: data communication, protocols and standards, various topologies and applications of network
	S.Y B.C.A (Science) Semester II	
		<ul style="list-style-type: none"> Understanding of object oriented Concepts and C++ programming
		<ul style="list-style-type: none"> To study Web Technology

		<ul style="list-style-type: none"> • Study of Advanced Networking and Network Security
		<ul style="list-style-type: none"> • Understanding of Object Oriented Software Engineering Concepts
	T.Y B.C.A (Science) Semester I	
		<ul style="list-style-type: none"> • To understand fundamentals of object-oriented programming using Java.
		<ul style="list-style-type: none"> • To know and understand the concepts of internet programming.
		<ul style="list-style-type: none"> • To understand software quality architecture, quality software, factors, component of software quality standards. • To understand the structure and functions of operating system, concept of processes, threads and its scheduling algorithms, design issues in process synchronization and deadlock management and memory management.
	T.Y B.C.A (Science) Semester II	
		<ul style="list-style-type: none"> • Developing applications using Android OS
		<ul style="list-style-type: none"> • To study various concepts of Python programming and how to apply the problem solving skills.
		<ul style="list-style-type: none"> • Internet of Things (IoT) for enabling the interconnection and integration of the physical world and the cyber space, SoC architectures, programming Raspberry Pi and implementation of internet of things and protocols.
		<ul style="list-style-type: none"> • Study of Data Analytics which aims to apply fundamental algorithmic ideas how to process data and apply hypotheses, Algorithm and data into actionable Predictions.
	M. Sc (Computer Science) Part I	
		<ul style="list-style-type: none"> • Students will be introduced with several paradigms of Programming Languages.
		<ul style="list-style-type: none"> • They will get in-depth knowledge of various concepts related to programming, compiler etc.
		<ul style="list-style-type: none"> • At the end of this year, students will understand different techniques of problem solving and also their analytical ability is improved.
		<ul style="list-style-type: none"> • They will able to apply various algorithms to solve some real life problems/issues.

		<ul style="list-style-type: none"> Students will get prepared for better placements. Because, they learn concepts which are very close to operating systems and assume to be vital topics as per as placements are concerned.
		<ul style="list-style-type: none"> Students do academic projects with the technologies of their choice or with the technologies on high demand by industry.
	M. Sc (Computer Science) Part II	
		<ul style="list-style-type: none"> Student learn to select and apply project management techniques for process modeling, planning, estimation, process metrics and risk management; perform software verification and validation using inspections, design and execution of system test cases.
		<ul style="list-style-type: none"> They learn concepts of wireless transmission, 4G, 5G; mobile application development etc.
		<ul style="list-style-type: none"> They learn latest subjects like Neural Networks, Fuzzy Systems and also get introduced with Genetic Algorithms.
		<ul style="list-style-type: none"> Subjects will help them to give indication about opportunities in the research field.
		<ul style="list-style-type: none"> Important thing is - Students do at least 4 months full time internship or undergo industrial training for the said period. They work on live projects during this period in the IT companies. They get hands-on experience with actual IT industry before they complete their degree.
	M. Sc (Computer Application) Part I	
		<ul style="list-style-type: none"> Student did graduation in any Science stream can also become a skilled software developer.
		<ul style="list-style-type: none"> Subjects like RDBMS, Web Technologies, C++ make students ready for placements.
		<ul style="list-style-type: none"> They will able to apply various algorithms to solve some real life problems/issues
		<ul style="list-style-type: none"> Students get introduced with latest trends in technology through subject syllabi.
	M. Sc (Computer Application) Part II	
		<ul style="list-style-type: none"> Students will get opportunities in the field of Information Security, Cyber Security or even in MIS.
		<ul style="list-style-type: none"> New programming paradigm they learn through Python Programming.
		<ul style="list-style-type: none"> Important thing is - Students do at least 4 months full time internship or undergo industrial training for the said period. They

		work on live projects during this period in the IT companies. They get hands-on experience with actual IT industry before they complete their degree.
Economics		
	F.Y. B. A. G1 Indian Economic Environment	<ul style="list-style-type: none"> • Ability to develop an understanding of the economic environment and the factors affecting economic environment.
		<ul style="list-style-type: none"> • 2. Ability to develop awareness on the various new developments in the different sectors of an economy – agriculture, industry, services, banking, etc
		<ul style="list-style-type: none"> • 3. Ability to compare and contrast Indian Economy with other world economies.
		<ul style="list-style-type: none"> • 4. At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
		<ul style="list-style-type: none"> •
	S. Y. B. A. G2 Modern Banking	<ul style="list-style-type: none"> • 1. To understand the evolution of modern Banking.
		<ul style="list-style-type: none"> • 2.To understand the role and function of Functions of Commercial Banks, credit creation
		<ul style="list-style-type: none"> • To understand New Technology in Banking system i.e.-banking,
		<ul style="list-style-type: none"> • 3.To understand role and function of RBI and monetary policy • Co-operative banking.
	S1 Micro Economics	<ul style="list-style-type: none"> • • 1. To understand the nature and scope of micro economics.
		<ul style="list-style-type: none"> • 2. To understand the theory of consumer behavior, analysis of production function and equilibrium of a producer.
		<ul style="list-style-type: none"> • 3. To understand the various nature of market i.e. perfect competition, monopoly and monopolistic competition.
	S2 Macro economics	<ul style="list-style-type: none"> • 1. To familiarize the students the basic concept of macro Economics application.
		<ul style="list-style-type: none"> • 2.To understand the concepts of national Income, Gross national Product, Net national Product, Per capita income, Disposable income
		<ul style="list-style-type: none"> • 3. To Understand the theory of macroeconomics.

	T. Y. B. A. G3 Economic Development & Planning	<ul style="list-style-type: none"> 1. To understand concept of growth and development
		<ul style="list-style-type: none"> 2. Study of various model of growth and development.
		<ul style="list-style-type: none"> 3. To understand the Meaning & Role of Foreign Capital in Economic Development.
		<ul style="list-style-type: none"> 4. To understand the Macroeconomic policy in economic development and planning.
	S3 International Economics	<ul style="list-style-type: none"> 1. To know the impact of free trade and tariffs on the different sectors of the economy as well as at the macro level.
		<ul style="list-style-type: none"> 2. To understand the Theories of International Trade.
		<ul style="list-style-type: none"> 3. To understand India's Foreign Trade and Policy .
		<ul style="list-style-type: none"> 4. To understand the Regional and International Co-operation and their impact on trade and policy .
	S4 Public finance	<ul style="list-style-type: none"> 1. To understand function and role of government in economics, needs of fiscal policy in developing countries like India.
		<ul style="list-style-type: none"> 2. to understand union budget on both side revenue and expenditure, gender responsive budget.
		<ul style="list-style-type: none"> 3. to understand central state financial relationship and 13th and 14th finance commission.
		<ul style="list-style-type: none"> 4. understand the fiscal policy and the rezones of increasing the public expenditure debt finance
	S4 Elementary Quantitative Technique	<ul style="list-style-type: none"> 1. To understand important of statistic techniques in economics.
		<ul style="list-style-type: none"> 2. To learn measurement of central tendency i.e. mean, mode, median.
		<ul style="list-style-type: none"> 3. Understand statistical application in Economics i.e. correlation and index number.
		<ul style="list-style-type: none"> 4. To understand sampling methodology and hypothesis testing.

	M. A. Part I	
	Micro Economic Analysis I	<ul style="list-style-type: none"> • Ability to apply the concepts of micro economics such as demand, supply, revenue, cost, elasticity, etc.
		<ul style="list-style-type: none"> • Ability to analyze and demonstrate knowledge of the basic theories/laws in economics- law of demand, law of supply, production function, etc.
		<ul style="list-style-type: none"> • At the end of the course, the student should be able to evaluate microeconomic concepts, models and its use in real life situations.
	Public Economics I	<ul style="list-style-type: none"> • Ability to recognize, apply and analyze concepts and theories in public economics.
		<ul style="list-style-type: none"> • Ability to appraise and assess the theory of public economics in real life situations.
	International Finance	<ul style="list-style-type: none"> • Ability to understand and interpret the concepts such as Balance of Payments, Exchange Rates, Foreign Exchange transactions, International capital flows, etc.
		<ul style="list-style-type: none"> • Ability to critically analyze the effects of deficits, exchange risk, role of foreign capital on the world economy/trade
		<ul style="list-style-type: none"> • Ability to discuss and debate on subjects related to international trade and finance w.r.t the Indian Economy
	Agricultural Economics	<ul style="list-style-type: none"> • Ability to analyze and evaluate the subject with reference to various aspects of agrarian economies.
		<ul style="list-style-type: none"> • Ability to develop an understanding of agriculture with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of agriculture.
	Micro Economic Analysis II	<ul style="list-style-type: none"> • Ability to understand, apply and analyze concepts-public debt, budget, fiscal policy in public economics.
		<ul style="list-style-type: none"> • Ability to interpret the theories relating to public economics in real life situations. •
		<ul style="list-style-type: none"> • Ability to discuss and debate on the public finance and policies w.r.t. India
	Public Economics II	<ul style="list-style-type: none"> • Get acquainted with different theoretical and practical aspects of language and literature teaching.
		<ul style="list-style-type: none"> • Understand different approaches, methods and techniques of teaching Economics language

		and literature.
		<ul style="list-style-type: none"> • Become sensitized to the major issues in ELLT in the Indian context
	International Trade	<ul style="list-style-type: none"> • Ability to understand the concepts of international economics such as comparative cost, terms of trade, trade policies and trade agreements
		<ul style="list-style-type: none"> • Ability to interpret and apply theory relating to understand international trade •
		<ul style="list-style-type: none"> • Ability to discuss and debate the effects of trade policy, trade agreements, exchange rate policies on the world economy/trade
	Labour Economics	<ul style="list-style-type: none"> • Ability to analyze and evaluate the subject with reference to various aspects of Labour economics. •
		<ul style="list-style-type: none"> • Ability to develop an understanding of the labour with its intricacies and imperfections and to be able to construct intellectual dialogue on the challenges of labour w.r.t. the Indian Economy.
	M.A. Part 2	
	Macro Economics I	<ul style="list-style-type: none"> • Students get knowledge of National Income and national accounts system.
		<ul style="list-style-type: none"> • Understand Aggregate supply and aggregate demand in different schools' point of view i.e. Keynesian and classical.
		<ul style="list-style-type: none"> • To understand systematic facts and latest theoretical development for empirical analysis.
		<ul style="list-style-type: none"> • Understand the basic concepts/ concerns/ frame work of macro Economics
	Growth & Development I	<ul style="list-style-type: none"> • To understand concept of growth and development.
		<ul style="list-style-type: none"> • Understand the Income distribution and inequality. Process of development.
		<ul style="list-style-type: none"> • Study of various model of growth and development.
		<ul style="list-style-type: none"> • To understand demographic features in economic development.
	Modern Banking	<ul style="list-style-type: none"> • Understand the evolution of banking.
		<ul style="list-style-type: none"> • Understand key role of banking in economic Development.
		<ul style="list-style-type: none"> • Understand the Financial and non-financial Institution.

		<ul style="list-style-type: none"> • Understand banking role in international finance market.
	Economics of Finance	<ul style="list-style-type: none"> • To understand and analyze the interconnection between the monetary forces and real forces.
		<ul style="list-style-type: none"> • Study of financial market and financial institution
		<ul style="list-style-type: none"> • To understand portfolio management.
		<ul style="list-style-type: none"> • To understand concepts of derivative market. Swap, option , forward and future market
	Macro Economics II	<ul style="list-style-type: none"> • To understand Demand theory of money and liquidity theory
		<ul style="list-style-type: none"> • Understand various schools theory of demand for money
		<ul style="list-style-type: none"> • Get ability to understand money supply and inflation and multiplier effect.
		<ul style="list-style-type: none"> • Understand theories of interest rate, monetary policy and macro economy.
	Growth &Development II	<ul style="list-style-type: none"> • To understand the role of agriculture and industry in economic development.
		<ul style="list-style-type: none"> • Understand the concept of fiscal and monetary policy.
		<ul style="list-style-type: none"> • To understand the role of IMF, world bank, FII and FDI in growth and development.
		<ul style="list-style-type: none"> • To understand the role of government in growth and development.
	Research Methodology	<ul style="list-style-type: none"> • Understand Importance of systematic research and research methodology.
		<ul style="list-style-type: none"> • Understand Types of date and sampling methods.
		<ul style="list-style-type: none"> • Understand research techniques. Processing dada on excel, SPSS.
		<ul style="list-style-type: none"> • Report writing.
	Rural Development	<ul style="list-style-type: none"> • To understand the dynamics of changes in the rural economy
		<ul style="list-style-type: none"> • To study of problems faced by rural population and also includes the critical review of various schemes and projects that benefit the rural population.
		<ul style="list-style-type: none"> • To understand need of agro based industries.
		<ul style="list-style-type: none"> • Understand the nature of society and the problems of the challenge to that society, through colonialism, at a later stage

Education		
	F.Y. B. A. Education	<ul style="list-style-type: none"> • Acquaint the aim of education in Ancient and Modern India • Understand various agencies of education • Understand the role of education in national development • Introduce the contributions made by renowned educators • Aware of the meaning, concept and problems of pre-primary and primary education in India • Acquaint the students with the Values Envisaged in the Constitution on India • Acquaint with educational psychology
	S. Y. B. A. Education	<ul style="list-style-type: none"> • Make him aware of the meaning, concept and problems of secondary education in India • Help him to understand the role and function of school in the development of a child • Introduce him the contributions made by renowned Indian and western educators. • Make him aware of the meaning and concept of Inclusive Education • Help him to understand the importance of heredity and environment in education. • Help him recognize the needs of children and their interests at different stages of development. • Help him understand the process of learning, remembrance and forgetting and the factors affecting these processes and their educational implication.
	T.Y.B.A. Education	<ul style="list-style-type: none"> • Make him/her aware of the meaning, concept, and problems of higher education in India • Know him/her education management system • Acquaint a student with the nature and development of personality, the nature and areas of individual differences and their relevance to education. • Able him/her to understand the importance of guidance and counselling in education . • Able him/her to understand the importance of different mental process • Introduce him/her different methods of teaching and nature of action research and its relevance to education • Understand concept. Need and importance of ICT and its application in education

		<ul style="list-style-type: none"> • Able him/her to understand the importance of mental health
Electronic Science		
	F.Y.B.Sc	<ul style="list-style-type: none"> • Basic circuit elements and passive components
		<ul style="list-style-type: none"> • DC circuit theorems and their use in circuit analysis
		<ul style="list-style-type: none"> • Characteristic features of semiconductor devices
		<ul style="list-style-type: none"> • Elementary electronic circuits and applications
		<ul style="list-style-type: none"> • Basics of operational amplifiers.
		Concepts of digital electronics
		Number systems and their representation
		Basic logic gates, boolean algebra and k- maps
		Arithmetic circuits, combinational circuits and sequential circuits
		Comparative aspects of logic families.
	S.Y.B.Sc.	
		<ul style="list-style-type: none"> • Basic principles of amplifiers and oscillators.
		<ul style="list-style-type: none"> • The working of various analog circuits.
		<ul style="list-style-type: none"> • Analog circuit design skills.
		<ul style="list-style-type: none"> • The knowledge of analog circuits in different applications.
		<ul style="list-style-type: none"> • K-maps in the design of combinational circuits.
		<ul style="list-style-type: none"> • The design principles of sequential circuits.
		<ul style="list-style-type: none"> • The design and working of various data converters
		<ul style="list-style-type: none"> • The digital circuits in system interfacing and applications.
		<ul style="list-style-type: none"> • The block diagram of electronic instruments
		<ul style="list-style-type: none"> • The working principles of frequently used instruments.
		<ul style="list-style-type: none"> • Important technical specifications of an instruments.
		<ul style="list-style-type: none"> • The operating procedure of instruments.
		<ul style="list-style-type: none"> • Basics of communication systems and telephone system.

		<ul style="list-style-type: none"> • Amplitude and Frequency Modulation.
		<ul style="list-style-type: none"> • Basics of AM and FM Receivers.
		<ul style="list-style-type: none"> • The digital communication system.
	T.Y.B.Sc.	
		<ul style="list-style-type: none"> • Architecture of 8-bit microcontroller.
		<ul style="list-style-type: none"> • How to use instruction set and addressing modes of microcontroller.
		<ul style="list-style-type: none"> • How to develop assembly language programming skills.
		<ul style="list-style-type: none"> • Interface memory and I/O devices.
		<ul style="list-style-type: none"> • The practical design aspects while using Opamps
		<ul style="list-style-type: none"> • The basic application circuits of Opamps
		<ul style="list-style-type: none"> • The specifications and selection criterion for linear ICs
		<ul style="list-style-type: none"> • Different special purpose ICs and their applications
		<ul style="list-style-type: none"> • How to refer and understand data manuals.
		<ul style="list-style-type: none"> • Crystal structure with reference to semiconductors
		<ul style="list-style-type: none"> • The theory of metal-semiconductor and p-n junctions
		<ul style="list-style-type: none"> • The characteristics of semiconductor devices
		<ul style="list-style-type: none"> • Theoretical background of BJT and FETs
		<ul style="list-style-type: none"> • Fundamentals of C language.
		<ul style="list-style-type: none"> • How to develop algorithm/flowcharts for problem solving and writing programs.
		<ul style="list-style-type: none"> • How to use functions, arrays, pointers and file handling in C language.
		<ul style="list-style-type: none"> • Different types of algorithm.
		<ul style="list-style-type: none"> • The principles of fiber optic communication system.
		<ul style="list-style-type: none"> • How to measure different parameter of optical fibers.
		<ul style="list-style-type: none"> • Essential optical components of Fiber Optic Communication.
		<ul style="list-style-type: none"> • The applications of fiber optic communication systems.

		<ul style="list-style-type: none"> • Use of 'C' language for programming the microcontrollers
		<ul style="list-style-type: none"> • How to use Timers, Interrupts and Serial Communication in Microcontroller.
		<ul style="list-style-type: none"> • How to apply the knowledge in real world • applications
		<ul style="list-style-type: none"> • Basics of power electronics and familiar with Power Electronic Devices, circuits and • applications
		<ul style="list-style-type: none"> • Power devices and protections of devices
		<ul style="list-style-type: none"> • Various types of power circuits
		<ul style="list-style-type: none"> • Applications of power electronics
		<ul style="list-style-type: none"> • Essential principles of Electromagnetics
		<ul style="list-style-type: none"> • The principles of quantum mechanical aspects
		<ul style="list-style-type: none"> • The basics of nanoelectronics.
		<ul style="list-style-type: none"> • Features of MATLAB as a programming tool.
		<ul style="list-style-type: none"> • To promote new teaching model that • will help to develop programming skills and technique to solve mathematical problems.
	M. Sc. Part I	
	Mathematical Methods in Electronics using C	<ul style="list-style-type: none"> • To get familiar with role of differential equations in applied electronics • To know about mathematical tools and techniques for network analysis • To learn the methods of analysis for CT and DT signals and systems • To learn concept of mathematical modeling of simple electrical circuits • To solve mathematical methods using C programming • To learn various advanced features, graphics and interfacing

		<ul style="list-style-type: none"> To learn concepts of object oriented programming in C++
	Analog Circuit Design	<ul style="list-style-type: none"> To learn the characteristics and working of electronic devices To study the various device models To study the wideband and narrowband amplifiers using BJT To develop skills in analysis and design of analog circuits To study the designs of opamp applications
	Digital System Design	<ul style="list-style-type: none"> To understand sequential and combinational logic design techniques To introduce VERILOG To learn various digital circuits using VERILOG To learn PLD, CPLD, FPGA and their applications
	BASICS OF FIBER OPTIC COMMUNICATION	<ul style="list-style-type: none"> To understand basics of optical fiber To know about the types of optical fibers To understand fiber optic communication system
	M. Sc. Part II	
	Applied Electromagnetics, Microwaves and Antennas	<ul style="list-style-type: none"> To introduce to students the concepts of electromagnetics To understand the theory of transmission lines and waveguides To study various parameters of antennas To study various methods of generation of microwaves
	Instrumentation and Measurement Techniques	<ul style="list-style-type: none"> To understand the configurations and functional descriptions of measuring instruments To understand the basic performance characteristics of instruments To understand the working principles of various types of sensors and transducers and their use in measuring systems

		<ul style="list-style-type: none"> • To study the techniques involved in various types of instruments • To understand the relevance of electronics with other disciplines
	Foundation of Semiconductor Devices	<ul style="list-style-type: none"> • To introduce crystal structure with reference to semiconductors • To introduce quantum and statistical mechanics • To understand the characteristics of semiconductor devices • To introduce theory of diode, transistor and FETs
	Fiber Optic Communication System	<ul style="list-style-type: none"> • To understand types of optical cables, connectors etc • To understand integrated optics and their components • To understand design of optical fiber communication system •
	Fundamentals and applications of AVR Microcontroller	<ul style="list-style-type: none"> • To understand the architecture, assembly language and interfacing of AVR • To learn embedded C programming • To learn software techniques to embed codes in to the systems
	Practical course	<ul style="list-style-type: none"> • To understand methodology of designing circuits • To learn how to solve different mathematical problems using programming language C or C++ • To understand effective use of different simulation softwares like VHDL and Proteus • To understand programming techniques on microcontrollers like AVR, PIC etc • To study antenna radiation pattern using different softwares • To develop skills of effective programming, designing the circuit for different electronic circuits
	Project	<ul style="list-style-type: none"> • To apply the knowledge for developing applications using electronic circuits • To inculcate systematic methodology of designing

		<p>an application and finally how to develop it into prototype</p> <ul style="list-style-type: none"> To experience the working environment in industry through internships in different industries
Geography		
	F.Y.B.A. Geography	
	Elements of Geomorphology (G-1)	<ol style="list-style-type: none"> Understand the basic concepts in Geomorphology Comprehend latest concept in Geomorphology Get acquainted with the utility and application of Geomorphology in different regions and environment. Get awareness of the need of protection and conservation of different landforms
	S.Y.B.A. Geography	
	Geography of disaster management (G2)	<ul style="list-style-type: none"> To introduce students the concept of disaster and its relation with geography. To acquaint with the utility and application of hazards in different areas & its management To make the students aware of the need of protection and disaster management
	Tourism Geography (S1)	<ul style="list-style-type: none"> Understand basic concepts of Geography & Tourism Comprehend the utility and application of Tourism Understand the interrelationship between tourism and employment generation opportunities. Understand the impact of tourism on Physical and Human Environments.
	Fundamentals of Geographical Analysis (S2)	<ul style="list-style-type: none"> Learn to use various Projections and Cartographic Techniques. Get acquainted with basic of Statistical data. Understand the principles of surveying, its importance and utility in the geographical study.
	T.Y.B.A Geography	

	Population and settlement Geography (S3)	<ul style="list-style-type: none"> To acquaint the students with the nature of man-environment relationship To adopt and modify the environment under its varied conditions from primitive life style to the modern living To identify and understand environment and population in terms of their quality and spatial distribution pattern To get acquainted with contemporary issues facing the global community
History	FYBA	
	History General Paper-1 (G1) Early India From Prehistory To The Age Of The Mauryas(Sem I) Post Mauryan Age To The Rashtrakutas (Sem II)	<ul style="list-style-type: none"> Acquire an understanding of India's ancient past. Develop a value based and thematic approach to the subject
	SYBA	
	History Gen. Paper-II(G2) Modern India(1857-1950)	<ul style="list-style-type: none"> Knowledge of History of freedom movement of India, aims, objectives, problems and progress of Independent India. Understand the processes of rise of modern India.
	History Special Paper-I (S1) Ancient India(3000BC-1206AD)	<ul style="list-style-type: none"> Survey the sources and political history of History of Ancient India. Understand the social, economic, religious and Cultural aspects of ancient India.
	History Special Paper-II (S2) Medieval India 1206-1707.	<ul style="list-style-type: none"> Survey the sources and political history of History of Medieval India. Understand the social, economic, religious and cultural aspects of Medieval India.
	TYBA	
	History Gen. Paper III (G3) History of the world in 20th Century	<ul style="list-style-type: none"> Understand the important development in the 20th century World. Get acquainted with the Socio- economic & Political developments in other

	(1914-1992)	countries.
	History Special Paper III (S3) Introduction to History	<ul style="list-style-type: none"> • Gain thorough knowledge of how history is studied, written and understood • Develop an understanding of the evolution of Historiography. • Get acquainted with the Various Views and approaches to Historiography.
	History Special Paper IV (S4) History of Asia in 20th Century (1914-1992)	<ul style="list-style-type: none"> • Understand the important developments in the 20th century Asia with a thematic approach • Understand the economic transition in Asia during 20th Centuries
	MA Part 1	
	C-1 History : Theory and Method	<ul style="list-style-type: none"> • Understand history and its forces in a better way
		<ul style="list-style-type: none"> • Gets ability to interrogate existing paradigms and challenge
		<ul style="list-style-type: none"> • Understand research in terms of formulating hypotheses and develop broad frames of interaction with other social sciences and attain certain level of interdisciplinary approach.
	C2 Evolution of ideas and institutions in Early India	<ul style="list-style-type: none"> • Understand the institutional bases of social, economic and political life of ancient India.
		<ul style="list-style-type: none"> • Acquire a conceptual and rational approach to India's past
	C3 Maratha Polity	<ul style="list-style-type: none"> • Get acquainted with the administrative system of the Marathas in an analytical way
		<ul style="list-style-type: none"> • Get acquainted with the nature of Maratha polity.
		<ul style="list-style-type: none"> • Understand basic components of the Maratha administrative structure, Maratha polity.
	Optional 8 USA: From Isolation to Hegemony	<ul style="list-style-type: none"> • Acquire an understanding of USA's role in world politics in the 20th century. • Understand various theoretical concepts related to world History.

	C4 Approaches to History	<ul style="list-style-type: none"> Acquire an understanding of the changes in approaches to the writing of history
		<ul style="list-style-type: none"> Understand history and its forces and learn to interrogate existing paradigms and challenge the outdated.
	C5 Ideas and institutions in medieval India	<ul style="list-style-type: none"> Understand the nature of medieval Indian society, economy, state formations, and the main religious currents of the time
		<ul style="list-style-type: none"> Understand the nature of society and the problems of the challenge to that society, through colonialism, at a later stage
	C6 Socio-Economic History of the Marathas	<ul style="list-style-type: none"> Develop and understanding of the relationship between religion, caste, customs, traditions, class and determinants of changes in social life in 17th and 18th century Maratha Society .
		<ul style="list-style-type: none"> Acquire and understanding of the various aspects of economic life, to trace the determinants of changes in economic life.
	Opt. 16 Economic History of Medieval India	<ul style="list-style-type: none"> Understand the nature of medieval Indian economy with an analytical approach.
		<ul style="list-style-type: none"> To enable the student to understand aspects of economic life and to trace the determinants of changes in economic life.
	M.A Part II	
	C-7 Ancient And Medieval Civilizations Of The World	<ul style="list-style-type: none"> Develop a general understanding of political and economic structures in the ancient and medieval world
		<ul style="list-style-type: none"> Acquire an overview of social, cultural and religious life in the ancient and medieval world.
	C-8 Debates in Indian History	<ul style="list-style-type: none"> Get acquainted to some of the issues that have been debated by historians in Indian history.
		<ul style="list-style-type: none"> Get knowledge of some of the perspectives with reference to these issues.

	C-9 Economic History of Modern India	<ul style="list-style-type: none"> • Get acquainted with structural and conceptual changes in Indian economy after coming of the British.
		<ul style="list-style-type: none"> • Become aware of the exploitative nature of the British rule.
		<ul style="list-style-type: none"> • Understand the process of internalization by Indians of new economic ideas, principles and practices .
	Opt.14 British Administrative Policies in India(1765- 1892)	<ul style="list-style-type: none"> • Understanding of the background to the making of British policies in India. • Understand various aspects of British administrative policies in India.
	C 10 History of modern India (1857-1971)	<ul style="list-style-type: none"> • Understand the history of modern India from an analytical perspective.
		<ul style="list-style-type: none"> • Become aware of the multi dimensionality of modern India.
		<ul style="list-style-type: none"> • Understand the ideas, institutions forces and movements that contributed to the Shaping of Indian modernity .
	C11 Intellectual History of the Modern West	<ul style="list-style-type: none"> • Get acquainted with the intellectual developments in the west in historical perspective
		<ul style="list-style-type: none"> • Understand the ideas and concepts that played an important role in shaping events in the transition from medieval to modern times.
	C12 World After world war II (1945-2000)	<ul style="list-style-type: none"> • Get acquainted with world politics post World War II
		<ul style="list-style-type: none"> • Understand contemporary world in historical perspective.
	Opt.22 East Asia: Japan (1853-2000)	<ul style="list-style-type: none"> • Gain an overview of Japan's transformation from Medieval to modern.
		<ul style="list-style-type: none"> • Acquire an understanding of the processes that bring about the changes.
B. Lib. I.Sc.	Foundations of Library and Information Science	<ul style="list-style-type: none"> • To understand purpose, role and importance of libraries in society • To familiarize students with development of libraries in general and India in particular • To make them aware about the five laws of library science. • To know about various types of libraries, their objectives & functions

	Library Organisation	<ul style="list-style-type: none"> • To train students in the organization of library work & collection development. • To familiarize with various library procedures & library house keeping activities.
	Reference Service & Information Sources	<ul style="list-style-type: none"> • To familiarize students with nature & organization of reference service in libraries. • To develop the skills for providing reference and information services.
	Information Science	<ul style="list-style-type: none"> • To provide an overview of Information Science to the students. • To familiarize the students with various Sources of Information & their categorization. • To study information needs of users.
	Knowledge Organization (A): Theory	<ul style="list-style-type: none"> • To understand the role of Library classification in knowledge organization. • To understand mode of formation of subjects in the universe of knowledge. • To introduce various concepts, theories and principles in classification.
	Document Description(A) Theory	<ul style="list-style-type: none"> • To understand the role of cataloguing for retrieving library materials. • To introduce the fundamentals , various concepts, theories and principles in Cataloguing
	Information Technology	<ul style="list-style-type: none"> • To introduce the students to IT and applications in library work. • To develop familiarity with library management software and Library Networks.
	Librarianship as a Profession	<ul style="list-style-type: none"> • To introduce the philosophy of librarianship to the students • To introduce the students to Library legislation in India & Maharashtra in particular. • Create awareness about various Library Associations & their role in Professional Development
	Library Management	<ul style="list-style-type: none"> • To make the students aware of principles & functions of management & their application to Librarianship • To understand, monitor & evaluate library procedures & practices.
	Reference Sources	<ul style="list-style-type: none"> • To familiarize the students with various reference and information sources, types, contents and their use for answering reference questions of different types. • To introduce the concept of Bibliographic contro
	Organization of Information & Services	<ul style="list-style-type: none"> • To familiarize the students with various techniques of Information Storage & Retrieval. • To provide knowledge about various indexing systems and services. • To introduce National and International Information Systems and Centers

	Knowledge Organization (B):Theory	<ul style="list-style-type: none"> • To understand the theory and principles of classification. • To get familiar with select schemes of classification.
	Document Description: (Theory) B	<ul style="list-style-type: none"> • To introduce various concepts, theories and principles in cataloguing & document description. • To impart knowledge about various standards in document description and bibliographic exchange.
	PRACTICALS	
	Knowledge Organization: Practical	<ul style="list-style-type: none"> • To develop skills for in using classification schemes for classifying various documents. • Steps in classification
	Document Description: Practical	<ul style="list-style-type: none"> • To develop skills in cataloguing documents using AACR-2R and CCC
	Information Technology Practical	<ul style="list-style-type: none"> • To give hands-on-experience in computer and application to library house keeping operations . • To create a database using MS Access. • Introduction to internet search.
	MLIB.ISC.	
	Information, Communication And Society	<ul style="list-style-type: none"> • To introduce to the students the concept of Information & its Communication in Knowledge Society. • To familiarize the students with professionalism & LIS Education • To introduce students with the concept of Economics of Information and Information

		<ul style="list-style-type: none"> • Industry & Knowledge Management.
	Introduction to research methodology & statistical Techniques of research	<ul style="list-style-type: none"> • To introduce application of Research Methodology in LIS and inculcate research skills among the students. • To understand the use of various data collection tools & statistical techniques for research • To give exposure to current trends of Research in LIS.
	Information Retrieval	<ul style="list-style-type: none"> • To understand use of indexing techniques, vocabulary control & search strategies for Information Storage & Retrieval. • To familiarize students with Information retrieval models and develop skills in designing thesaurus. • To introduce Consolidation & Repackaging of Information into Information Products.
	Information Technology: Basics	<ul style="list-style-type: none"> • To introduce the concept & use of ICT and its application in Libraries and Information Centres. • Development of skills in planning and implementation of library automation • Study of digital library, use of e-documents & current trends in the use of ICT
	Management Of Libraries And Information Centres	<ul style="list-style-type: none"> • To study the functions of management & their application to librarianship. • To familiarize students with the concept of System Analysis, Management of Change , TQM & Marketing of LIS services.
	Bibliographic Control And Information Systems	<ul style="list-style-type: none"> • To familiarize students with the meaning and tools for Bibliographical Control of Information. • To provide knowledge about the information systems and understand the rationale behind internationalization in information systems.
	Information Technology – Applications	<ul style="list-style-type: none"> • To provide students with hands-on-experience in the use of Library Software, CD and Internet Search. • To develop skills in web page designing.
Marathi		
	FYBA Marathi General Paper-1 (G1)	<ul style="list-style-type: none"> • Get introduced to Marathi literature, language and culture.
		<ul style="list-style-type: none"> • Create interest in Marathiliterature.
		<ul style="list-style-type: none"> • Develop the literarytaste
		<ul style="list-style-type: none"> • Get ability to appreciateliterature.
		<ul style="list-style-type: none"> • Connect literature to real life experience.

	<ul style="list-style-type: none"> • Understand various branches and movements of Marathi literature.
	<ul style="list-style-type: none"> • Develop linguistic skills to meet the requirements in the age of globalization.
SYBA Marathi General Paper-2 (G2)	<ul style="list-style-type: none"> • Get introduced to standard writing practices.
	<ul style="list-style-type: none"> • Develop the skill of translation.
	<ul style="list-style-type: none"> • Understand aspects of Biography and Autobiography.
	<ul style="list-style-type: none"> • Develop ability to appreciate and evaluate selected Biographies and Autobiographies in modern Marathi literature.
SYBA Marathi Special Paper-1(S1) Marathi Sahityatil Vividh Sahitya prakar	<ul style="list-style-type: none"> • Get basic knowledge of Marathi literature. • Get introduced to literary classics of different historical periods.
	<ul style="list-style-type: none"> • Create and cultivate taste in Marathi literature.
	<ul style="list-style-type: none"> • Understand to analyze, evaluate and appreciate literary texts.
	<ul style="list-style-type: none"> • Develop ability for in-depth study of literature.
SYBA Marathi Special Paper-2 (S2)	<ul style="list-style-type: none"> • Understand the history of Marathi literature.
	<ul style="list-style-type: none"> • Get the concept of literary history Clarified.
	<ul style="list-style-type: none"> • Get introduced to the nature, source and types of Marathi literature from 1818 to 1960.
	<ul style="list-style-type: none"> • Get acquainted to the major Marathi writers and their works from 1818 to 1960.
TYBA Marathi General Paper-3 (G3)	<ul style="list-style-type: none"> • Get acquainted to various movements in Modern Marathi literature.
	<ul style="list-style-type: none"> • Generate interest in modern Marathi literature
	<ul style="list-style-type: none"> • 3. Get introduced to media.
	<ul style="list-style-type: none"> • 4. Develop skill in preparing materials for media including Newspaper, Radio and TV.
TYBA Marathi Special Paper-3 (S3)	<ul style="list-style-type: none"> • Understand the nature and function of literature.

	<ul style="list-style-type: none"> • Understand the nature of the process of literary creation and the concept of literary genus.
	<ul style="list-style-type: none"> • Acquire ability to analyze the process of literary appreciation.
	<ul style="list-style-type: none"> • Get acknowledged to some fundamental concepts in literary appreciation.
TYBA Marathi Special Paper-4 (S4)	<ul style="list-style-type: none"> • Understand the original development of Marathi language in the light of linguistic theories.
	<ul style="list-style-type: none"> • Understand the evolution of Marathi language.
	<ul style="list-style-type: none"> • Get acquainted to the basic features of Marathi language.
	<ul style="list-style-type: none"> • Get introduced to historical and descriptive linguistics.
Mathematics	
F.Y.B.Sc.	<ul style="list-style-type: none"> • Recognize that mathematics permeates the world around us.
	<ul style="list-style-type: none"> • Appreciate the usefulness, power and beauty of mathematics.
	<ul style="list-style-type: none"> • Enjoy mathematics and develop patience and persistence when solving problems.
	<ul style="list-style-type: none"> • Understand and be able to use the language, symbols and notation of mathematics
	<ul style="list-style-type: none"> • Develop mathematical curiosity and use inductive and deductive reasoning when solving problems.
	<ul style="list-style-type: none"> • Become confident in using mathematics to analyze and solve problems both in school and in real-life situations.
	<ul style="list-style-type: none"> • Develop the knowledge, skills and attitudes necessary to pursue further studies in mathematics.
	<ul style="list-style-type: none"> • Develop abstract, logical and critical thinking and the ability to reflect critically upon their work and the work of others.
	<ul style="list-style-type: none"> • Develop a critical appreciation of the use of information and communication technology in mathematics.
	<ul style="list-style-type: none"> • Appreciate the international dimension of mathematics and its multicultural and historical perspectives.
S.Y.B.Sc.	

Linear Algebra	<ul style="list-style-type: none"> • Definition and examples of vector space. Concepts of vector space & linear independence. Basis and dimension of a vector space. • Definition and example of linear transformation. • The inner product spaces. • Concepts of Eigen values and Eigen vectors.
Numerical Analysis	<ul style="list-style-type: none"> • Concepts of errors. Concept of fitting of polynomial. • The different types of operators. • Numerical Integration, • Numerical differentiation, • Interpolation.
Multivariable Calculus I	<ul style="list-style-type: none"> • Definition and examples of limits & continuity. • Partial derivative and chain rule . • Taylor's Theorem. Extreme value problems. • Surface and Volume integrals.
Multivariable Calculus II	<ul style="list-style-type: none"> • Line integrals of vector fields as well as scalar fields. • Application find center of mass, moments of wire and surfaces, work done, flux, circulation of vector fields. • Stoke's theorem, • Gauss theorem on \mathbb{R}^3.
Discrete Mathematics	<ul style="list-style-type: none"> • Logic and proof strategies, • predicates and quantifiers, • Counting, Inclusion exclusion principal.
Laplace Transform	<ul style="list-style-type: none"> • Laplace transform, inverse Laplace transform, • Applications to differential equations, Fourier series.
T.Y.B.Sc.	
MT 331 :Paper I: Metric spaces	<ul style="list-style-type: none"> • The concepts in metric spaces are generalization of limit and continuity of functions from one metric space to other metric spaces. • The metric spaces is generalization of Euclidean metric on \mathbb{R}^n. This helps to students to understand intrinsic properties of Euclidean spaces. • This also helps to students understand the topological properties of surfaces and curves. • The concept of deformation is also well

	understood.
MT 332: Paper II: Real Analysis I	<ul style="list-style-type: none"> • Students understand : • Real-valued functions, countability, cantor set, • Sequences of real numbers, convergence, divergence, Cauchy sequences, series of real numbers, convergence and divergence of series
MT 334: Paper IV: Group Theory	<ul style="list-style-type: none"> • Students understand concept of Group, Subgroup, cyclic group and their properties. Group homomorphism and isomorphism. Cosets, direct product, • Groups of permutations, orbits, cycles, alternating groups, cosets, T • heorem of Lagrange. Normal subgroup, Factor groups, Maximal normal subgroup, simple groups.
MT 335: Paper V: ODE	<ul style="list-style-type: none"> • This helps to students to solve initial value problems linear differential equations of higher order as well as initial value problems of system of linear differential equations of first order. • The problems in physics, economics, chemistry, biology are formulated in terms of initial and boundary value problems of differential equations. • The syllabus of the ODE is first step for students to solve such modeled problems.
MT 337(A): Operations Research	<ul style="list-style-type: none"> • Students understand: • Two variable LP model, Graphical LP solution, LP applications, Simplex, dual, Two phase method to solve LP model. Transportation, assignment models and their applications.
MT 337(C): C programming -I	<ul style="list-style-type: none"> • In the course student learn basic topic about C namely data types, • functions and arrays. Also learn a skill to formulate C programs to solve small problems in Discrete Mathematics and • Linear algebra like Fibonacci sequence, sorting algorithms, multiplication of matrices. This helps to students elaborate logical thinking.
MT 341: Paper I: Complex Analysis	<ul style="list-style-type: none"> • Basic algebraic properties of Complex numbers, • Continuity, differentiability of Functions of complex variables, Analytic functions, • Integrals, series of complex numbers, residues and poles
MT 342: Paper II: Real Analysis II	<ul style="list-style-type: none"> • Riemann integrals, fundamental theorem of integral calculus, mean value theorem,

	<ul style="list-style-type: none"> Improper integrals of first and second kind, Uniform Convergence and pointwise convergence of sequences and series of functions
MT 344: Paper IV: Ring Theory	<ul style="list-style-type: none"> Students understand Rings and fields, Integral domains, fields of quotients of an integral domain, rings polynomials, factorization of polynomials over a field, homomorphism and factor rings, prime and maximal ideals, unique factorization domains, Euclidean domains, Gaussian integers and Multiplicative norms.
MT 345: Paper V: Partial Differential Equations	<ul style="list-style-type: none"> Students understand: Surfaces and curves in three dimensions, orthogonal trajectories, system of curves, Pfaffian differential equations, classification of integrals, compatible systems, integral surfaces through a given curve, quasi linear equations.
MT 347(C) C-programming -II	<ul style="list-style-type: none"> In this course students learn about user defined data types like structures which helps to them for forming softwares for online records of students in college offices ,records of customers in banks .
MT347(F) Computational Geometry	<ul style="list-style-type: none"> This course is introduction of taking 2-D views of 3-D objects which helps in reconstruction of the object back. Also the course introduces the Bezier curves and cubic spline method.
Microbiology	
F. Y. B. Sc. Paper I: Introduction to Microbial world; Bacterial cell and biochemistry	<ul style="list-style-type: none"> Understand the definition of Microbiology and Microorganisms.
	<ul style="list-style-type: none"> Get ability to differentiate between different types of microorganisms. Understand Basic Biomolecules, bacterial cell structure and function
	<ul style="list-style-type: none"> Get ability to explain the importance and applications of microbiology in our day to day life or society.
	<ul style="list-style-type: none"> Ability to identify and name of common microorganisms with their genus and species.
Paper II: Basic techniques in Microbiology; Microbial cultivation and growth	<ul style="list-style-type: none"> Get ability define and state the principles of various fundamental techniques used in microbiology.
	<ul style="list-style-type: none"> Understand the methods, requirements to grow different type of microorganisms.

	<ul style="list-style-type: none"> • Understand how to describe the basic techniques in microscopy and how to visualize the microorganisms using various • types of microscopes.
Practicals: Basic Techniques in Microbiology	<ul style="list-style-type: none"> • Comprehend the basic techniques of microbiology like staining, cultivation of microorganisms. They will be able to identify different types of microorganisms using staining or morphologically with the help of microscope i.e. morphotyping.
	<ul style="list-style-type: none"> • Understand the principle and handle the different instruments like incubator, • Microscope, Autoclave, etc. used in microbiology laboratory.
Industrial Microbiology	
F.Y.B.Sc.	
Paper I: Introduction to Industrial Microbiology and Microorganism: Quantitative Industrial microbiology	<ul style="list-style-type: none"> • Understands terms of Industrial microbiology, Bioprocesses, types of fermentations, USP, DSP, Patents. • Basic calculations in biological processes.
Paper II: Introduction to Industrial process and economics; Industrial bioprocess and microbial products	<ul style="list-style-type: none"> • Applications of biological products. • Process design optimization. • Business plans, Microbial enzymes, biomass production and health care products.
Practicals:	<ul style="list-style-type: none"> • Understands Good lab practices, bioreactors, isolation of microorganisms
S.Y.B.Sc	
S.Y.B.Sc. MB211: Bacterial systematics and Physiology	<ul style="list-style-type: none"> • Understand the concept of taxonomy and summarize them with the help of Chemotaxonomy, Numerical taxonomy etc.
	<ul style="list-style-type: none"> • understand the importance of genetic • analysis in taxonomy.
	<ul style="list-style-type: none"> • Get ability to distinguish between the • methods of taxonomy.
	<ul style="list-style-type: none"> • Understand the importance of enzymes in living cell and distinguish between different • classes of enzymes and their function.

	<ul style="list-style-type: none"> • Get ability to illustrate and explains the various metabolic pathways of the cell in particular prokaryotic.
MB 212: Industrial and soil microbiology	<ul style="list-style-type: none"> • Understand the importance of microorganisms in Industry.
	<ul style="list-style-type: none"> • Acquire ability to describe industrially important microorganisms.
	<ul style="list-style-type: none"> • Understand the method of cultivation of microorganisms on large scale.
	<ul style="list-style-type: none"> • Understand the distinction between the types of fermentation processes and fermentors.
	<ul style="list-style-type: none"> • Comprehend the construction and working of different fermentors.
	<ul style="list-style-type: none"> • Understand the important soil microorganisms and their role in agriculture.
	<ul style="list-style-type: none"> • Understand how soil microorganisms helps in maintaining with elemental cycles in nature.
MB 221: Bacterial Genetics	<ul style="list-style-type: none"> • Get ability to summarize the basics of genetics eg., DNA, RNA structure.
	<ul style="list-style-type: none"> • Get ability to paraphrase the concept of gene.
	<ul style="list-style-type: none"> • Understand the concept of central dogma of molecular biology and its mechanism.
	<ul style="list-style-type: none"> • Understand the basic molecular processes like DNA replication, transcription and translation.
	<ul style="list-style-type: none"> • Understand various types of mutations and their causes.
MB 222: Air and water Microbiology	<ul style="list-style-type: none"> • Understand air and water microflora.
	<ul style="list-style-type: none"> • Get ability to distinguish between microorganisms present in air and water.
	<ul style="list-style-type: none"> • Master various techniques to measure the air and water microflora.
MB 223: Practical course	<ul style="list-style-type: none"> • Master techniques of microbiology like growth analysis (Calculation of growth rate, specific growth rate and generation time).

	<ul style="list-style-type: none"> • Get ability to analyse effect of salt, pH, temperature, heavy metals on bacterial growth.
	<ul style="list-style-type: none"> • Practical for the second year students is kept more flexible, designed to evolve project themes on environment, agriculture and pollution aspects eg., Biochemical characterization of bacteria, Bacteriological • tests of potability of water.
S. Y. B. Sc.	
S.Y.B.Sc. Voc- IND- MIC 211 & 221: Bioreactors- designs and operations ; Microbial fermentations and downstream processing	<ul style="list-style-type: none"> • Understands parts and types of bioreactors and their operational parameters • Production processes of various biomolecules
S.Y.B.Sc. Voc- IND- MIC 212 & 222: Screening and process optimization ; Quality assurance for Industrial fermentation products	<ul style="list-style-type: none"> • Screening for production strains, and scales of fermentation • Quality assurance tests
Practical:	<ul style="list-style-type: none"> • Understands enzyme activity calculations, Microbial assays, etc.
T. Y. B. Sc.	
T.Y.B.Sc. MB 331 and 341: Medical Microbiology	<ul style="list-style-type: none"> • Understand anatomy and physiology, with respect to pathogen and diseases.
	<ul style="list-style-type: none"> • Understand how to classify and characterize diseases causing organisms like bacterial, fungal, viral etc.
	<ul style="list-style-type: none"> • Understand the pathogenesis, diagnosis, epidemiology of diseases and their causative agents.
MB 332 and 342: Genetics and Molecular Biology	<ul style="list-style-type: none"> • Get ability to extend their knowledge from prokaryotic gene expression to eukaryotic gene expression, their control and damage.
	<ul style="list-style-type: none"> • Understand various techniques of gene transfer and their role in gene mapping.
	<ul style="list-style-type: none"> • Understand recombinant DNA technology (RDT), methods in RDT and their applications in various fields.
MB 333 and 343: Enzymology and Metabolism	<ul style="list-style-type: none"> • Understand enzymology with respect to identification, assays purification and kinetics.
	<ul style="list-style-type: none"> • Understand the role of co enzyme in enzyme catalysis.

	<ul style="list-style-type: none"> • Comprehend Bioenergetis, Biosynthesis and degradation pathways.
	<ul style="list-style-type: none"> • Understand bacterial photosynthesis.
MB 334 and 344: Immunology	<ul style="list-style-type: none"> • Understand the term immunology, immunity, types of that.
	<ul style="list-style-type: none"> • Understand components of immune system and get ability to describe them in detail.
	<ul style="list-style-type: none"> • Understand Immunoglobulins, Antigen-Antibody Interactions etc.
MB 335 and 345: Fermentation technology	<ul style="list-style-type: none"> • Understand the process of fermentation.
	<ul style="list-style-type: none"> • Understand the steps and methods of industrial fermentation.
	<ul style="list-style-type: none"> • Understand the types of bioreactors and their role in fermentation.
	<ul style="list-style-type: none"> • Understand downstream processes for various products.
MB 336 and 346: Applied Microbiology	<ul style="list-style-type: none"> • Understand the role of microorganisms in dairy, food, and environment.
	<ul style="list-style-type: none"> • Understand milk chemistry and microbiology.
	<ul style="list-style-type: none"> • Understand how to apply process of food preservation, food spoilage and microorganisms involved in them.
MB 347: Applied Microbiology (Practical course I)	<ul style="list-style-type: none"> • Understand various techniques carried out in industries like fermentation, food and dairy.
MB 348: Biochemistry and molecular biology (Practical course II)	<ul style="list-style-type: none"> • understand various biochemical techniques like chromatography, centrifugation, DNA and plasmid isolation, their quantification.
MB 349: Clinical Microbiology (Practical course III)	<ul style="list-style-type: none"> • Understand various techniques in clinical Microbiology, Immunohematology, Immunoprecipitation, Agglutination tests etc.
T. Y. B. Sc. Industrial Microbiology	
T.Y.B.Sc. Voc- IND- MICRO 335 and 336: Pollution control technology : Plant and Animal Tissue Culture	<ul style="list-style-type: none"> • Understands basic methodologies in waste water management • Introduction to ATC and PTC
T.Y.B.Sc. Voc- IND- MICRO 345 and 346: Molecular Biology and RDT : Entrepreneurship development	<ul style="list-style-type: none"> • Basic techniques for gene cloning and recombinant DNA technology • Introduction of how to become an entrepreneur, setting up the company and management.

T.Y.B.Sc. Voc- IND- MICRO 347 : Practical course based on Voc-IND- Micro- 345,346,335,336	<ul style="list-style-type: none"> Practicals based on molecular biology, ATC, PTC, Pollution control and RDT.
M.Sc. Microbiology -I	
MB 501 Microbial Systematics	<ul style="list-style-type: none"> Understand the concept of speciation and species evolution. Taxonomy of Bacteria and Exploration of Un-culturable microbial diversity.
MB 502 - Quantitative Biology	<ul style="list-style-type: none"> Understand the concept of Descriptive Statistics, Inferential Statistics-1&2; Probability and Probability Distribution
MB 503 – Biochemistry and Metabolism	<ul style="list-style-type: none"> Understand the concept of Biochemistry of Proteins and Biochemistry and Molecular Biology Techniques, Developmental Biology and cell biology.
MBTE11 Fungal Systematics and Extremophiles	<ul style="list-style-type: none"> Understand the concept of Fungal Systematics and Extremophiles
MBPE11:Practicals Based on Fungal Systematics and Extremophiles	<ul style="list-style-type: none"> Understand the practical approach for Extremophiles and Extremophiles.
MBCP1 Biochemical Techniques(Practical based on compulsory theory credits)	<ul style="list-style-type: none"> Understand the practical approach for 1. Isolation and identification of yeasts and saprophytic molds from natural samples 2. Isolation and identification of the following extremophiles from natural samples: Acidophiles and Halophiles
MB601 Instrumentation and Molecular Biophysics	<ul style="list-style-type: none"> Understand the concept of Separation and analysis of Biomolecules, Biophysical Techniques.
MB602 Molecular Biology	<ul style="list-style-type: none"> Understand the concept of RNA processing &Molecular Techniques, Tools for Genetic engineering, Genome projects and Molecular diagnostics and applications.
MB603 Enzymology, Bioenergetics and Metabolism	<ul style="list-style-type: none"> Understand the concept of Enzymology, Bioenergetics, Lipid Chemistry and Metabolism and Carbohydrate Chemistry and Metabolism.
MBTE23 Nitrogen Metabolism, respiration and Photosynthesis	<ul style="list-style-type: none"> Understand the concept of Bioinformatics, Techniques in Bio-nanotechnology.
MBPE23 Practicals based on Nitrogen Metabolism, respiration and Photosynthesis	<ul style="list-style-type: none"> Understand the practical approach for the Cloning and screening, PCR amplification and purification of 16S rRNA gene and Protoplast fusion

MBCP2 Molecular biology, enzymology and instrumentation Techniques(Practical based on compulsory theory credits)	<ul style="list-style-type: none"> Understand the practical approach of Nitrogen metabolism, respiration and Photosynthesis.
M.Sc. Microbiology -II	
MB – 701: Immunology	<ul style="list-style-type: none"> Understand the concept of cell surface molecules and receptors , Regulation of Immune response, Experimental Immunology
MB – 702: Molecular Biology – I	<ul style="list-style-type: none"> Understand the concept of Tools in molecular biology, Fine Control of Prokaryotic and Eukaryotic transcription, RNA processing and Mobile DNA elements.
MB- 703: Industrial wastewater treatment	<ul style="list-style-type: none"> Understand the concept of Principles of Wastewater Treatment, Pretreatment & Primary treatment process and Secondary and Tertiary Treatment process
MB-711: Practical course based on Immunology, Pharmaceutical Microbiology and Environmental Microbiology	<ul style="list-style-type: none"> Understand the practical approach for Antigen . Antibody Interactions, Cell Culture Techniques, Detection and isolation of anti-infectives from plant and Industrial waste water treatment
MB-712: Practical course based on Molecular Biology (I and II) and Microbial Technology	<ul style="list-style-type: none"> Understand the practical approach for Molecular Biology - I and II and Molecular Biology - II
MB – 801: Pharmaceutical and Medical Microbiology	<ul style="list-style-type: none"> Understand the concept of Drug Discovery and Development and Development of Anti-infectives
MB 802: Molecular Biology II	<ul style="list-style-type: none"> Understand the concept of Genomics and Gene technology
MB 803: Microbial Technology	<ul style="list-style-type: none"> Understand the concept of Bioreactor design and operation and Process Variables and Monitoring
MB 811: Dissertation I	A dissertation is useful for student either singly or in group. Thesis writing and practical approach is useful.
MB 812: Dissertation II	A dissertation is useful for student either singly or in group. Thesis writing and practical approach is useful.
Physics (B.Sc.)	

The student should be able to acquire

- A fundamental/systematic or coherent understanding of the academic field of Physics, its different learning areas and applications in basic Physics like Material science, Nuclear Physics, Condensed Matter Physics, Atomic and Molecular Physics, Mathematical Physics, and its linkages with related disciplinary areas / subjects like Chemistry, Mathematics,;
- (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of Physics, including professionals engaged in research and development, teaching and government/public service;
- Demonstrate the ability to use skills in Physics and its related areas of technology for formulating and tackling Physics-related problems and identifying and applying appropriate physical principles and methodologies to solve a wide range of problems associated with Physics.
- Recognize the importance of mathematical modeling simulation and computing,
- Plan and execute Physics-related experiments or investigations, analyze and interpret data/information collected using appropriate methods including the use of appropriate software such as programming languages
- Demonstrate relevant generic skills and global competencies such as (i) problem-solving skills that are required to solve different types of Physics-related problems with well-defined solutions, (ii) communication skills involving the ability to listen carefully, to read texts and research papers analytically and to present complex information; (iv) ICT skills; (v) personal skills such as the ability to work both independently and in a

	group.
Political Science	
FYBA	
G-I Introduction to the Indian Constitution	<ul style="list-style-type: none"> • To familiarize students with the working of the Constitution of India • Understand the political processes and the actual functioning of the political system • Get acquainted to the political structure both Constitutional and Administrative
SYBA	
G 2 POLITICAL THEORY & CONCEPTS	<ul style="list-style-type: none"> • It seeks to explain the evolution and usage of these concepts, ideas and theories with reference to individual thinkers both historically and analytically. • The different ideological standpoints with regard to various concepts and theories are to be critically explained with the purpose of highlighting the differences in their perspectives and in order to understand their continuity and change
WESTERN POLITICAL THOUGHT S I	<ul style="list-style-type: none"> • Understand the concepts, ideas and theories in political theory.
	<ul style="list-style-type: none"> • Comprehend the evolution and usage of concepts, ideas and theories with reference to individual thinkers both historically and analytically.
Political Sociology S II	<ul style="list-style-type: none"> • To understand the relation between politics and society • To enable students to understand how man becomes a political animal and the various influences that shape their behaviour
TYBA	
POLITICAL IDEOLOGIES G3 Optional I	<ul style="list-style-type: none"> • This paper studies the role of different political ideologies and their impact in politics. • Each ideology is critically studied in its historical context • The close link between an idea and its actual realization in public policy needs to be explained as well.

LOCAL SELF GOVERNMENT IN MAHARASHTRA G 3 Optional 2	<ul style="list-style-type: none"> • To introduce the students to the structure of Local Self Government of Maharashtra. • To make students aware of the various Local Self Institutions, their functions, compositions and importance. • To identify the role of Local Government and Local Leadership in development.
PUBLIC ADMINISTRATION S III	<ul style="list-style-type: none"> • This paper is an introductory course in Public Administration • . The paper covers personnel public administration in its historical context thereby proceeding to highlight several of its categories, which have developed administrative salience and capabilities to deal with the process of change. • The recent developments and particularly the emergence of New Public Administrations are incorporated within the larger paradigm of democratic legitimacy. The importance of legislative and judicial control over administration is also highlighted
INTERNATIONAL POLITICS S IV	<ul style="list-style-type: none"> • This paper deals with concepts and dimensions of international relations and makes an analysis of different theories highlighting the major debates and differences within the different theoretical paradigms. • The dominant theories of power and the question of equity and justice, the different aspects of balance of power leading to the present situation of a unipolar world are included. • It highlights various aspects of conflict and conflict resolution, collective security and in the specificity of the long period of the post Second World War phase of the Cold War, of Détente and Deterrence leading to theories of rough parity in armament
Psychology	
FYBA G1: General Psychology	<ul style="list-style-type: none"> • Understand the basic principles of Psychology.
	<ul style="list-style-type: none"> • Comprehend the historical trends in psychology, major concepts, theoretical Perspectives and empirical findings.
	<ul style="list-style-type: none"> • Get an overview of the applications of Psychology.
	<ul style="list-style-type: none"> • Understand the importance of better mental health in life.
SYBA G2: Social Psychology	<ul style="list-style-type: none"> • Understand the basic concepts, methods and theories in social Psychology

	<ul style="list-style-type: none"> Comprehend the process of attitude formation.
	<ul style="list-style-type: none"> Realize the nature, causes and prevention of aggression
	<ul style="list-style-type: none"> Understand the causes and Consequences of group behavior
SYBA S-1: Abnormal Psychology	<ul style="list-style-type: none"> Acquaint with DSM-5 and ICD -10 and recent classification of abnormality.
	<ul style="list-style-type: none"> Acquire the knowledge about the causes, symptoms and treatments of various types of psychological disorders.
	<ul style="list-style-type: none"> Familiarize with the list of perspectives of Psychopathology.
SYBA S-2: Positive Psychology	<ul style="list-style-type: none"> Understand what Positive Psychology is.
	<ul style="list-style-type: none"> Realize the importance of well-being at different stages of life.
	<ul style="list-style-type: none"> Get acquainted with Happiness and Positive Traits of Personality.
TYBA G3: Industrial and Organizational Psychology	<ul style="list-style-type: none"> Comprehend the emergence of Industrial and Organizational Psychology.
	<ul style="list-style-type: none"> Get acquainted with the work done in Industrial and Organizational Psychology.
	<ul style="list-style-type: none"> Understand the significance of training, performance appraisal, leadership models.
	<ul style="list-style-type: none"> Realize the importance of Engineering Psychology.
TYBA S-3 :Scientific Research and Experimental Psychology	<ul style="list-style-type: none"> Get acquainted with the basic concepts of experimental psychology and research methodology.
	<ul style="list-style-type: none"> Orienting students with the spirit of inquiry in research.
	<ul style="list-style-type: none"> Acquire skill of generating ideas for research, hypotheses and operational definitions of variables.
	<ul style="list-style-type: none"> Understand basic steps in scientific research.
	<ul style="list-style-type: none"> Familiarize with basic information and knowledge about test-administration and scoring, and interpretation of the obtained results.
	<ul style="list-style-type: none"> Ability to undertake an independent small-scale research project.
TYBA S-4: Psychology Practical: test and experiments	<ul style="list-style-type: none"> Familiarize with the use of elementary statistical techniques.

	<ul style="list-style-type: none"> • Ability to administer and score psychological tests and interpret them.
	<ul style="list-style-type: none"> • Acquaint with the basic procedure and design of Psychological experiments.
	<ul style="list-style-type: none"> • Learn to undertake a small-scale research project.
	<ul style="list-style-type: none"> • Ability of practical application of theories and perspectives in Psychology through study tour and visits.
	<ul style="list-style-type: none"> • Encourage students to learn practical application through study tour and visit.
MA-1: Cognitive psychology: understanding	<ul style="list-style-type: none"> • Comprehend the origin of cognitive psychology.
	<ul style="list-style-type: none"> • Acquire the knowledge of cognitive psychology.
	<ul style="list-style-type: none"> • Familiarize with recent trends incognitive psychology.
	<ul style="list-style-type: none"> • Ability to relate subject matter of cognitive psychology to daily life.
Psychometrics: The science of psychological assessment	<ul style="list-style-type: none"> • Critically understand the measurement issues and techniques in psychological inquiry.
	<ul style="list-style-type: none"> • Develop skills and competencies in test construction and standardization.
	<ul style="list-style-type: none"> • Understand the various biases in psychological testing and assessment.
Research methodology-I (Issues and essential techniques in statistics and experimental design)	<ul style="list-style-type: none"> • Familiarize with the basics of scientific research in applied psychology
	<ul style="list-style-type: none"> • Acquire with statistical rigors in designing research and processing data.
Psychology Practical: Testing	<ul style="list-style-type: none"> • Skill to administer the standardized psychological tests, establish rapport, interpret scores and write report.
	<ul style="list-style-type: none"> • Understand the criteria of evaluating the psychological tests.
	<ul style="list-style-type: none"> • Acquire certain counseling skills on the basis of psychological results.
Cognitive Psychology: Advances And Application	<ul style="list-style-type: none"> • Understand the advances in cognitive psychology

	<ul style="list-style-type: none"> • Skill to apply cognitive Psychology in different fields.
Psychometrics: Applications	<ul style="list-style-type: none"> • Understand the use of psychological tests for the purpose of assessment, guidance and enhancing the effectiveness of teaching-learning process
	<ul style="list-style-type: none"> • Understand the use and interpretation of various psychological tests used in educational field.
	<ul style="list-style-type: none"> • Understand the use of psychological tests that are used for better health, adjustment and related counseling
	<ul style="list-style-type: none"> • Understand the use of psychological tests in clinical and organizational settings
Research Methodology-II (Qualitative methods and contemplative practices)	<ul style="list-style-type: none"> • Familiarize with about the philosophical foundations, goals and scope of qualitative methodology.
	<ul style="list-style-type: none"> • Understand the relationship between paradigms of science and methods of qualitative inquiry.
	<ul style="list-style-type: none"> • Acquaint with basic procedures of using qualitative methodology.
	<ul style="list-style-type: none"> • Comprehend scientific rigor in the use of qualitative methodology.
	<ul style="list-style-type: none"> • Ability to use the statistical rigors in multivariate analysis
Psychology Practical: Experiments	<ul style="list-style-type: none"> • Familiarize with various areas of experimentation in psychology
	<ul style="list-style-type: none"> • Skill to conduct experiments in psychology
	<ul style="list-style-type: none"> • Ability to apply experimental designs and writing report in standardized styles
MA-2: Personality	<ul style="list-style-type: none"> • 1. Acquaint with comprehensive, rigorous and systematic treatment of centrally important theories of personality.
	<ul style="list-style-type: none"> • 2. Ability to observe and interpret individual differences in behaviour in the light of sound theoretical systems of personality.
	<ul style="list-style-type: none"> • 3. Skill to apply the theories of personality in different walks of life.
Motivation and Emotion	<ul style="list-style-type: none"> • 1. Familiarize with major theories of motivation and emotion.
	<ul style="list-style-type: none"> • 2. Acquire knowledge of biological factors in process of motivation and emotion.

	<ul style="list-style-type: none"> 3. Understand the importance of positive and negative emotions in human life.
Psychopathology-I	<ul style="list-style-type: none"> 1. Familiarize with latest DSM-5 classification of Mental Disorders.
	<ul style="list-style-type: none"> 2. Understand various paradigms of Psychopathology.
	<ul style="list-style-type: none"> 3. Ability to identify symptoms and prognosis of different Mental Disorders
Psychodiagnostics: Procedure And Techniques	<ul style="list-style-type: none"> 1. Familiarize with Various Psychodiagnostics, procedure & techniques
	<ul style="list-style-type: none"> 2. Skill to use Different Psycho diagnostic tools.
Psychotherapies	<ul style="list-style-type: none"> Familiarize with Various Psychotherapies and its basic procedure.
	<ul style="list-style-type: none"> Skill to use appropriate psychotherapy in solution of particular problem
	<ul style="list-style-type: none"> 3. Acquire different psychotherapeutic skills.
FY B.Sc- Foundations of Psychology	<ul style="list-style-type: none"> Understand the basic psychological processes and their applications in day to day life
	<ul style="list-style-type: none"> Develop the ability to evaluate cognitive processes, learning and memory of an individual.
	<ul style="list-style-type: none"> Understand the importance of motivation and emotion of the individual.
	<ul style="list-style-type: none"> Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.
Experimental Psychology	<ul style="list-style-type: none"> Familiarize with basic concepts of Experimental Psychology.
	<ul style="list-style-type: none"> Ability to use different methods of psychophysics, learning, reaction time.
	<ul style="list-style-type: none"> Skill to use psychological tests, intelligence, aptitude and personality
Psychology Practical: Experiments	<ul style="list-style-type: none"> Acquaint the basic concepts of Experiments in Psychology.
	<ul style="list-style-type: none"> Ability to conduct the experiments and to understand its practical applications.
	<ul style="list-style-type: none"> Familiarize with basic knowledge of elementary statistics
	<ul style="list-style-type: none"> Ability to understand human behavioural and mental processes through experiments.
Introduction to Social Psychology	<ul style="list-style-type: none"> Familiarize with the basics of social psychology
	<ul style="list-style-type: none"> Comprehend the nature of self, concept of attitude and prejudice of the individual

	<ul style="list-style-type: none"> Acquaint with the interactional processes, love and aggression in our day today life. .
	<ul style="list-style-type: none"> Understand group dynamics and individual in the social world.
Psychological Testing	<ul style="list-style-type: none"> Familiarize with basics of psychological testing
	<ul style="list-style-type: none"> Skill to assess the human abilities.
	<ul style="list-style-type: none"> Ability to understand and evaluate behaviour analysis.
Psychology Practical: Tests	<ul style="list-style-type: none"> Familiarize with the basic concepts of Tests in Psychology.
	<ul style="list-style-type: none"> Acquaint about how to administer the tests and to understand its practical applications.
	<ul style="list-style-type: none"> Familiarize with basic knowledge of elementary statistics.
	<ul style="list-style-type: none"> Ability to understand and evaluate human abilities through psychological testing.

SOCIOLOGY

Sociology G1	FYBA SEM I- Introduction to Sociology	<ul style="list-style-type: none"> To understand the social context of emergence of Sociology. To introduce basic sociological concepts and subject matter and perspectives of Sociology To familiarize students with new avenues in Sociology.
Sociology G1	FYBA SEM II Sociology: Social Institutions and Change	<ul style="list-style-type: none"> To acquaint students with basic institutions of Society with its newer dimensions. To develop critical understanding of the functioning of social institutions. To acquaint students with the concept and current versions of social change.
Sociology G 2	SYBA Population and Society	<ul style="list-style-type: none"> To introduce the significance of population studies and explain theories and basic concepts. To understand the impact of population on various institutions of society. To understand the importance of population studies for policy and development.
	SYBA Spl- I 1 Foundations of Sociological Thought	<ul style="list-style-type: none"> To introduce the students to the works of classical sociologists that shaped the discipline. To expose the students to the processes that shaped the discipline of sociology in India. To familiarize the students to major perspectives and works of some Indian sociologists.
	SYBA Spl- II Indian Society: Issues and Problems (<ul style="list-style-type: none"> To familiarize the students to different social issues and problems. To acquaint the students to the changing nature of social problems in India. To enable students to analyse social issues and

		problems using different sociological perspectives.
Sociology	TYBA G 3 Crime and Society	<ul style="list-style-type: none"> To acquaint the students with recent trends in criminology, changing profile of crime and criminals. To prepare the students for professional roles of correctional agents in agencies of criminal justice administration.
	TYBA Spl-III Social Research Methods	<ul style="list-style-type: none"> To impart basic research skills. To introduce the students to different procedures in conducting social research. To acquaint the students to different types of research and issues in research. To familiarize the students with Sociological approaches to research.
	TYBA Spl-IV Contemporary Indian Society	<ul style="list-style-type: none"> To appreciate the plurality of India, its composite culture and its resilience. To acquaint the students to the issues of contemporary India. To expose the students to the crisis and challenges of contemporary India.
Statistics		•
	F. Y. B. Sc.	•
Paper-I		<p>To understand:</p> <ul style="list-style-type: none"> Types of data and methods of data collection. Scales of measurement such as linear, circular etc. Concepts of statistical population and sample (random and non-random) for deterministic experiments. Three main aspects after data collection: <ul style="list-style-type: none"> a) Representation of data in tabular, diagrammatic (bar diagram, multiple bar diagram, etc.) and graphical (histogram, ogive, box plot, etc.) formats. b) Analysis of data by computing measures of central tendency and dispersion, coefficients of skewness and kurtosis, central and raw moments, determination of linear relationship correlation and regression analysis. c) Interpreting the values and results obtained in step (b) and making suitable inferences. <p>Index numbers: Definition, interpretation and usage.</p>
Paper-II		<ul style="list-style-type: none"> Basic concepts of random experiment, random variable, probability, etc. Calculation and usage of probability in real life situations. Standard discrete probability distributions and

	<p>their applications.</p> <ul style="list-style-type: none"> • Univariate and bivariate random variables giving day-to-day real life examples. • Project for better understanding of the subject.
S. Y. B. Sc.	
Paper-I	<p>To understand:</p> <ul style="list-style-type: none"> • Extension of discrete probability distributions learnt in F.Y.B.Sc. and introduction to truncated distributions. • Forecasting and data analysis techniques for time series data. • Statistical software package – R: Basics and practical demonstration. • Quantitative problem solving skills in all topics. • Multiple linear regression plane, multiple and partial correlations along with their applications. • Testing of significance of population mean, population variance and population proportion. • Statistical tools in the field of demography and queuing theory. • Quantitative problem solving skills in all the above topics.
Paper-II	<ul style="list-style-type: none"> • Probability density function and mathematical expectation, their relevance in case of discrete random variable. • Standard continuous probability distributions viz. Normal, Exponential, Gamma, etc. and their applications. • Statistical probability tables: Introduction and usage. • Computation of probability using relevant integrals. • Identification of a probability model that best describes the situations on hand. • Introduction of probability distributions like t, F, χ^2 etc.
	<ul style="list-style-type: none"> • Tests of significance: Goodness of fit, independence of attributes, Mc Nemar's test, etc. • Time series: Introduction, component wise analysis and forecasting tools. • Statistical inference of summary statistics using R software. • Various statistical softwares like MS-Excel, R, TORA for the enhancement of basic statistical concepts. • Project for better understanding of the subject.
T. Y. B. Sc.	

<p>Papers I to VI</p>	<p>To understand</p> <ul style="list-style-type: none"> • Order statistics and continuous distributions like Bivariate normal, Lognormal, Laplace, etc. • Sampling techniques like SRSWR, SRSWOR, Systematic sampling, Cluster sampling, Stratified sampling etc. with their properties. • Sample size estimation for the given population. • Sample surveys conducted by NSSO. • Design of experiments: CRD, RBD, LSD, factorial expt., confounding, ANOCOVA etc. • Algorithms, flowcharts and levels of computer languages. • Basic operations, Control structure, Array, Pointer, Function, etc. in Turbo C. • Writing programs for solving mathematical problems and statistical data analysis using Turbo C. • Regression Analysis: Simple and multiple linear regression, fitting of models by verifying all the assumptions, inference related to linear regression model and introduction of logistic regression.
<p>Papers I to VI</p>	<ul style="list-style-type: none"> • Introduction to applications of Statistics in Insurance particularly referred to as Actuarial Statistics (giving abundant career opportunities to students). • Hypotheses testing: Introduction, various methods, parametric and non-parametric tests. • Introduction of S.Q.C., statistical process control, control charts and their applications. Statistical product control, sampling plans and their applications. • Linear programming problems and their applications. Students are introduced to specific problems like transportation from various sources to destinations and assigning jobs to persons, etc. • Basic properties of survival function, computation of reliability of a coherent system, difference between parametric and non-parametric estimation methods of survival function. • Develop programming skills using R software to solve numerical problems and analyze statistical data using for, while, if functions.