



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Chemistry

Sr. No.	Class	Course	Course Outcomes
1	F. Y. B. Sc. Chemistry (Annual Pattern)	Paper I Physical & Inorganic Chemistry	This course enables students to understand basic laws regarding states of matter, surface chemistry, thermodynamics and structure of the atom. Students are also made aware of mole concept, derivations, depictions and problem solving and periodic properties of the elements including the preliminary theories of bonding.
		Paper II Organic & Inorganic Chemistry	Students are made aware of fundamental concepts of organic and inorganic chemistry that governs the structure, bonding, properties, structural effects, acid-base theories, preparation methods, reactivity and stereochemistry of organic molecules.
		Paper III Practical chemistry	Chemistry is an experimental subject; the practical course is intended to achieve the basic skills required for understanding the concepts and authenticating the basic laws and principles of chemistry & helps in the development of practical skills of the students.
2	S. Y. B. Sc. Chemistry (semester Pattern)	Physical & Analytical Chemistry CH211	Students are made aware of the kinetics of chemical reactions, photochemical laws, distribution law, and extraction process. Students are introduced to analytical chemistry in which they are made aware of inorganic qualitative analysis and analysis of organic compounds (Qualitative & Quantitative). Along with it they also study error in quantitative analysis & ways to minimize them.
		Organic & Inorganic Chemistry CH212	Students are made aware of the stereochemistry of different stereoisomers & organic reaction mechanism in which they study different types of reagents, reactions and their mechanisms. Students are introduced to metallurgy to understand chemical reactions and processes occurred in metallurgy. The corrosion & passivity is also included in the syllabus.
	Semester II	Physical & Analytical Chemistry CH221	Students are made aware of concepts of Helmholtz free energy & Gibbs free energy as well as the free energy of chemical reactions & physical transformation. Students also study different modes of concentration, distillation of solutions of liquid in liquid, partially immiscible liquids & distillation of immiscible liquids. Students are made to understand volumetric analysis wherein they study non-instrumental volumetric

			analysis which comprises the study of various titrations, indicators used in it & some theoretical aspects related to titrations.
		Organic & Inorganic Chemistry CH222	Students are introduced to various biomolecules, their role & structural aspects. Students also study different oxidizing and reducing reagents, their selectivity to different substrates, heterocycles, their preparation & reactions. Students are introduced to organometallic chemistry & the use of organometallic compounds in the synthesis of organic as well as inorganic compounds. They also study chemical toxicology to know adverse effects of chemicals.
	S. Y. B.Sc. Chemistry (Annual Pattern)	Practical course	Students are trained to determine the rate constant of chemical reactions, the heat of solution, the heat of neutralization, critical solution temperature of the partially miscible system & distribution coefficient. Students are trained for quantitative analysis of different samples such as Na ₂ CO ₃ in washing soda, Aspirin in APC tablet, Aluminium in Alum, the strength of H ₂ O ₂ , Copper in Brass & iodimetric methods. Students are trained for organic & inorganic qualitative analysis. They are also trained for the preparation of organic compounds & chromatographic techniques like TLC.
3	T. Y. B.Sc. Chemistry Semester III	CH-331 Physical Chemistry	Students have introduced the basic concept of physical chemistry. They also learn methods to determine the order of reaction, Arrhenius equation, and graphical evaluation of energy of activation. Students learn principles and applications of rotational, vibrational, raman and electronic spectroscopy. Students will get familiar with phase rule, phase diagram of one and two component systems.
		CH-332 Inorganic Chemistry	Students are made aware of the principles of various theories of bonding like Sidgwick model, Werner's theory VBT, CFT, MOT. They are also made aware of the principles of isomerism, nomenclature, and structures of inorganic complexes.
		CH 333 Organic chemistry	It is the basic course in organic chemistry. Students are introduced with concepts like acidity, the basicity of organic molecules, electrophile, nucleophile, and good and bad leaving groups. Students are introduced to the stereochemistry of disubstituted cyclohexane. Students are able to understand mechanism of organic reaction. Arrow drawing concept which is important part of reaction mechanism is explained thoroughly in this course. Students are able to identify different types of organic reactions and also they can understand reactivity profile of organic molecules.
		CH 334 Analytical Chemistry	Students are made aware of quantitative chemical analysis using techniques like gravimetry, polarography, AAS, FES, and spectrophotometry at the levels of macro, micro and trace analysis of metals and

			non-metals from industrial and natural samples.
		CH-335 Industrial Chemistry	This course enables the students to learn the use of agrochemicals like pesticide, insecticides, fungicides, fertilizers and their environmental impact. The study of the food industry makes them aware of food adulteration, storage, and processing of food. This course also provides opportunity to study agrochemicals, food chemicals on industrial scale. Students also learn to manufacture of basic chemicals such as Ammonia, Sulphuric acid, and Nitric acid. Syllabus further comprises study of petrochemicals and eco- friendly fuels, where students study processing of petrochemical fuels, properties of fuels and applications of fuels, non-conventional energy. The syllabus also includes study of cement and glass industry. Properties, manufacture, and applications of different types of cement and glass.
		CH-336 (C) Biochemistry	Students are introduced to the properties and character of fundamental components of a living organism such as proteins, carbohydrates, lipids, vitamins, and hormones. Students are expected to get familiarize with cell types, cell organelles and various techniques used in biochemical studies.
	T. Y. B.Sc. Chemistry Semester IV	CH-341 Physical Chemistry	The course aims to give fundamental understanding and applications of electrochemical Cells, Nuclear Chemistry, Crystal structure, and Quantum Chemistry. Students get to know thermodynamics and EMF, Chemical cell with and without transfer, application of EMF measurements such as pH determination, determination of solubility and solubility product. Basic elements of quantum chemistry are also introduced.
		CH- 342 Inorganic Chemistry	Students are made aware of the chemistry of f block elements principles and applications of catalysis, organometallic chemistry and the principles and the applications of metals, semiconductors, and superconductors.
		CH -343 Organic chemistry	Students are introduced to carbanions and their reactions. Retrosynthetic analysis concepts are explained to students. Rearrangement reactions are introduced with a mechanistic approach. Spectroscopic techniques like PMR, U.V., and I.R. are introduced. Students learned to differentiate organic compounds with the help of these spectroscopic techniques.
		CH 344 Analytical Chemistry	The students are trained in the technique of separation, identification of purification using chromatographic techniques like TLC, GC, HPLC, electrophoresis, etc. This knowledge enables them to be good analytical of Quality control chemist in various fields.
		CH-345 Industrial Chemistry	Students are expected to learn properties, ways to manufacture or process and application of different types of polymer, paints, pigments, dyes, soaps, detergents and cosmetics. Students also learn theoretical aspects of the manufacturing of sugar and fermentation

			industry. Syllabus further includes the study of Pharmaceutical industry where students are introduced to general aspects of drug action, manufacturing of some drugs and its usage and lastly there is topic that discusses problems caused by industry such as pollution and generation of waste and what are the ways which can prevent or minimize it.
		CH-346 (C) Biochemistry	Students need to know the significant metabolic pathways necessary for the sustenance of life. Fundamental processes associated with the central dogma of molecular biology are taught. Students get acquainted with applications of genetic engineering in various fields like agriculture, industries, and medicine.
	T. Y. B.Sc. Practical Chemistry (Annual)	CH- 347 Physical Chemistry Practical	Students are trained in techniques such as pH metry, Conductometry, Potentiometry, Colorimetry, Spectrophotometry, Refractometry, and G. M. Counter. They learn to use these techniques in order to understand various chemical reactions.
		CH- 348 Inorganic Chemistry Practical	Students are trained in the IQA of different mixtures of inorganic compounds, and the separation of the metal ions using chromatographic techniques and inorganic quantitative analysis using the techniques of gravimetry, volumetry, colorimetry
		CH-349 Organic Chemistry Practical	Chemistry is an experimental subject; the practical course is proposed to achieve the basic skills required for understanding the reactivity of organic molecules and validating the basic principles. It helps in the development of practical skills of the students & understanding the importance of chemical safety and also explains the factors affecting reaction outcomes and yields.

Courses Offered – Post Graduate Chemistry

Sr. No.	Class	Course	Course Outcomes
1	M.Sc I Semester- I Organic & Drug Chemistry	CH-110 Fundamentals of Physical Chemistry I	The course aims to provide a fundamental understanding of physical chemistry, students learn the concept of Gibbs and Helmholtz energies, Chemical potential, Expressing Chemical equilibrium in terms of chemical potential. Elements of quantum chemistry, wave particle duality, uncertainty principle, wave function and its interpretation, well behaved functions, orthonormal functions, Schrodinger equation, particle in a box, degeneracy, quantum mechanical harmonic oscillator, and quantum tunnelling are introduced. Students are made aware of Chemical kinetics and reaction dynamics topics such as Reversible reactions, the principle of microscopic reversibility, steady state approximation, elucidating mechanism using SSA. Arrhenius theory, enzyme catalysis, and Michaelis-Menten mechanism.
		CH -130	Students are made to understand the symmetry and group

		Molecular Symmetry & Chemistry of s & p block elements	theory and use this knowledge to interpret the properties like dipole moment, optical activity, and signals in IR and Raman spectroscopy for structure identification. Students are also made to understand the periodic trends in properties of S and P block elements and their applications in fields like catalysis, industry, human metabolism, and medicines, etc.
		CH-150 Basic Organic Chemistry	This is a primary course for both organic & Drug Chemistry students. This course is designed to make students aware of basic organic chemistry, including reaction mechanism, how to write structures of organic molecules more realistically, Stereochemistry of carbon compounds, etc. The main intention of this course is to make the students perfect for mechanisms of some basic organic reactions.
		CH-190 Safety in Chemical Laboratory and Good Laboratory Practices	This course is aimed at providing student necessary guidelines for Safety in Chemical Laboratory and Good Laboratory Practices. Students get acquainted with different types of hazards at the workplace, use of personal protective and other safety equipment, types of fire extinguishers & method of use, Inventory Management, Storage and Disposal and importance and principle of Good Laboratory Practices (GLP).
	M.Sc I Semester- II Organic & Drug Chemistry	CH-210 Fundamentals of Physical Chemistry II	The course aims to provide an understanding of physical chemistry, In this course, the fundamentals of molecular spectroscopy are introduced. Students learn basic elements of rotational, vibrational, Raman and electronic spectroscopy. Nuclear and radiation Chemistry concepts are introduced. Students get familiar with Chemical Bonding: Valence Bond theory, hybrid orbitals, geometry and hybridization, Molecular Orbital Theory, linear variation method, Approximations underlying Huckel theory, bond order, Aromaticity, Applications of Huckel theory.
		CH- 230 Coordination and Bioinorganic Chemistry	Students are made aware of spectral and magnetic properties of d and f block elements and spectrophotometric analysis of metals like Cr, Mn, Ni and magnetic behavior of various complexes of f block elements in MRI and as TV phosphors. Students are also made aware of the role of the metal ion in biologically active compounds like Hb, Mb cytochromes and use of anticancer drugs i.e. platinum complexes.
		CH-250 Synthetic Organic Chemistry & Spectroscopy	The first section of this course is aimed to make students familiar with various basic organic reactions with different examples along with their mechanism. The second section deals with the basic introduction to various Spectroscopic methods like UV, IR, ^1H , ^{13}C -NMR and Mass Spectrometry and their application in structure determination of various organic molecules.
		CH-290 Basic Biochemistry	Understanding the importance and properties of biomolecules like proteins, carbohydrates, lipids, nucleic acid, etc. Students get familiarized with cell types, cell organelles, biomembrane for drug transport and fundamental processes like replication, transcription, and translation. Students learn the scope of biochemistry subject

			in pharmaceutical sciences.
M.Sc I Organic Practical Chemistry (Annual)	CH-107 Physical Chemistry Practical		Students are trained to use techniques such as pH metry, Conductometry, Potentiometry, Colorimetry, Spectrophotometry, Refractometry, and G. M. Counter. These techniques will enable them to work as quality control chemist in various labs and such organizations.
	CH -127 Inorganic Chemistry Practical		Students are trained for the preparation of various solutions, synthesis of various inorganic complexes and their characterization. The students are trained for the handling of natural materials and their quantitative analysis which involves disintegration, separation and individual estimations. They are trained to handle various equipment like spectrophotometer, flame photometer, conductometer, etc.
	CH- 248 Organic Chemistry Practical		Students are trained to different purification techniques in organic chemistry like recrystallization, distillation, steam distillation, and extraction. Students are made aware of safety techniques and the handling of chemicals. Students are made aware of carrying out different types of reactions and their workup methods.
MSc.-I Drug Chemistry Practical (Annual)	CHD-108 Separation, Purification &Analytical techniques		This is a practical course in organic chemistry framed for Drug chemistry students. It includes separation & isolation of organic compounds from mixtures and natural sources like plant material. It also includes purification & storage of organic solvents. Techniques like TLC, Column chromatography, distillation, recrystallization, etc. will develop their skills in organic chemistry chemistry lab.
	CHD-128 Analytical Chemistry Practical		Students are trained to prepare various solutions. They are made use to handle various commercial samples of drugs and their analysis. The principles of various analytical methods are used for identification, separation, and estimation of a variety of samples. They are also trained to handle the instruments and interpret the data to arrive at conclusion.
	CHD-248 Organic chemistry practical		This course is designed to make students aware of how to perform organic synthesis in the laboratory. This course includes synthesis of some derivatives & organic compounds, which will help them while working in the lab for sem –iii & iv and also in industrial lab in future. Making derivatives of organic compounds will help them in industry or while doing research in medicinal chemistry for Drug development.
M.Sc. –II Organic & Drug Chemistry Semester III	CHO-350 Organic reaction mechanism		This course enables the students to learn the mechanistic aspects or organic reactions in details. This involves the use of recent reagents, catalysts, and experimental set up to carry out reactions on an industrial scale. In order to find a detailed mechanism, study of this course gives idea about the use of different techniques like radio labeling, isolation of intermediates and trapping of intermediates and pulse radiolysis. This helps to understand the paths of organic reactions in a better way.
	CHO-351		This course gives an idea about the basic understanding of

		Analytical methods in organic chemistry	Spectroscopic methods like ^1H , ^{13}C - NMR, 2D NMR Techniques and Mass Spectrometry. The students understand the basic theory of NMR, Mass Spectrometry and also advance NMR techniques like 2D NMR. They also learn how to apply these analytical methods in the structure determination of either known organic molecules or new chemical molecules.
		CHO-352/CHD-364 Stereochemical Principles & Asymmetric synthesis	This course is framed mainly for stereochemistry cyclic compounds, their stability & reactions. This course will be really helpful to students to understand the stereochemistry of organic chemistry and to think about new stereoselective reactions as far as the asymmetric synthetic part is concerned. This course also includes the resolution of racemic modification and stereochemistry using spectroscopic method viz. PMR. Which will be helpful in their future to predict the stereochemistry using PMR like method.
		CH-353 Heterocyclic, Pericyclic & Photochemical Reactions	The course aims to give a fundamental theoretical understanding of heterocyclic chemistry, including alternative general methods for ring synthesis and application of such methods for the preparation of specific groups of heterocyclic systems. This course also includes pericyclic and photochemical reactions along with reactive intermediates. Students are made aware of different types of pericyclic reactions like electrocyclisation, cycloaddition, sigmatropic, chelotropic and group transfer. Molecular orbital theory, PMO and FMO theory are thoroughly discussed. Principles of photochemical reaction, photochemistry of carbonyl compounds are thoroughly discussed.
	M.Sc. –II Drug Chemistry Semester III	CHD-363 Drug Development	Students are introduced to an overview of the immune system, immune response to its mechanism, Autoimmunity, Hypersensitivity, and different immunological techniques. Students are also made aware of Drug discovery & Drug development. In this they are introduced to different systems of medicine, sources of drugs, history of drug discovery, lead discovery and development, pharmacophore identification, toxicological evolution and clinical trials, pharmacokinetics & pharmacodynamics, routes of drug administration and formulation. They also study patent and intellectual property rights, industrial safety.
	M.Sc. –II Organic & Drug Chemistry Semester IV	CHO-450 Chemistry of Natural products	Post graduate students are taught to understand the chemistry of natural products. In this course they learn how nature uses various pathways to synthesize large number of primary and secondary metabolites through the process of biogenesis. Following the same idea, that helps the chemists to plan synthetic strategies to prepare those pharmaceutically important compounds in laboratory. Part of this course involves multistep laboratory synthesis of some of the important secondary metabolites.
		CHO-451/ CHD-461	This course is specially designed for some advanced organic reactions viz. coupling reactions, multicomponent reactions,

		Advanced Synthetic Organic Chemistry	domino reactions, olefination reactions, etc. This also includes designing organic synthesis using a retrosynthetic method which will help students to plan the synthesis of new organic molecules.
		CHO: 452 Medicinal chemistry CHD-462 Advanced medicinal chemistry	In this course, students are introduced to drugs, their chemical & biological properties, mode of action and discovery. They also learn drug targets, antimicrobial, anticancer drugs, antibiotics, antifungals, antivirals drugs, etc. They are also introduced to gastrointestinal & CNS disorders and their treatments. This course also includes QSAR which will be helpful for designing & developing drugs.
		CHO-453/ CHD-464 Current trends in organic Chemistry: Supramolecular, Green chemistry, photochemical & free radical reactions. Entrepreneurship development and project management.	This course is designed to make students aware of supramolecular chemistry which includes bonding other than covalent bonding like dipole-dipole, pi-pi, ion-pi interactions, etc. This also includes how such forces make molecular assemblies stable. It also enables students to learn the ecofriendly approach of synthesizing chemicals (Green Chemistry). The study of this course makes students aware in terms of designing synthetic plans, reducing potential risk, minimizing environmental pollution & cost effective manufacturing processes. This course also includes study of photochemical and free radical reactions for drug chemistry students. Entrepreneurship is focused on developing knowledge, skills, and understanding of how an innovative and creative idea, product, or process can be used to form a new and successful business or to help an existing firm to grow and expand. By creating job opportunities for people, an entrepreneur provides wealth to the people. They tend to start a new business with innovation like providing the best quality product within low price so that people can save their money and get the best product. This strengthens the economy of a country. For this purpose Government also welcomes entrepreneurs to start their business.
	M.Sc. –II Organic Chemistry Practical (Annual) M.Sc. –II Drug Chemistry Semester IV	CHO-347 Single stage preparations	This is a practical course of organic chemistry including one stage preparations of organic compounds also the synthesis of some heterocycles. As per the objective this course is helpful to students to develop their skills in organic chemistry laboratory.
CHO-447 Two stage Preparations		This gives hands on experience to students about the various organic transformations in the laboratory. This involves preparations of organic compounds through single, double and multistep synthesis. They get training to set up new reactions, follow-up of the progress of reaction by techniques like TLC, MP/BP and workup of reactions to purify desired products. Microscale preparations also help the students to improve upon their practical skills and reduce environmental pollution.	
CHO-448 Practical (Green		This practical course is designed to make the student aware of green chemistry and the role of green chemistry in	

		Chemistry)	pollution reduction. Here student learns how to avoid solvents and do solvent free reaction. Also the work-up procedure in many experiments is made more eco-friendly to environment.
		CHD-463 (Drug Design)	Students are also made aware of the Structure of cell membrane, functions, classification of receptors and its activation, optimising target interactions and optimising access to targets, Drug –Receptor interactions, SAR & QSAR. They also study prodrug, combinatorial chemistry, High throughput Screening. Students are introduced to Computers Aided Drug Design it includes the Basic concept of computational chemistry, force fields, energy minimization, ligand based drug design, dock, autodock, flexidock, virtual screening, Case studies on drug design.
	M.Sc. –II Drug Chemistry Practical (Annual)	CHD-367 Organic Synthesis	This is the advanced practical course in organic chemistry for Drug Chemistry students including single stage preparations, two & three stage preparations. The intention is to make students perfect while working in an organic chemistry lab. Also, they will be able to think for newer routes for synthesis of organic compounds.
		CHD-469 Advanced practicals	The Practical course provides an opportunity for students to learn about the various organic transformations in the laboratory. This involves preparations of organic compounds through single, double and multistep synthesis. They get training to set up new reactions, follow-up of progress of reaction by techniques like TLC, MP/BP and workup of reactions to purify desired products. Microscale preparations also help the students to improve upon their practical skills and reduce environmental pollution.
		CHD-468 Biochemistry & Microbiology	Students are expected to carry out basic experiments related to biochemistry like isolation, separation, and purification of drug targets like proteins or enzymes. Students get practical training in inhibitor kinetics, DNA/Protein-Drug interaction studies using biochemical experiments. The students are introduced to equipment used in the microbiology lab. Students are acquainted with the sterilization equipment procedure. They are trained to maintain a septic condition while media preparation and staining process to study morphology.



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Botany

Sr. No.	Class	Course	Course Outcomes
1)	FYBSc.		<p>The syllabus includes basic as well as advanced concepts in the plant sciences from first year to the third year shall inspire the students for pursuing higher studies in Botany and for becoming an entrepreneur and also enable students to get employed in the Botany subject based industries. Introduction: Objectives: 1. This course is to ensure that you can achieve an up-to-date level of understanding of plant science. 2. Botany is a branch of biological science that focuses on the study of plants and how they survive and interact with other living and nonliving things in the environment. At the undergraduate and graduate levels, the curriculum for a botany degree typically consists of lecture-based courses, labs and field research. 3. A three-year bachelor's degree program in botany provides the foundation for prospective botanists to pursue a graduate level education or find an entry-level career. 4. To highlight the potential of these studies to become an entrepreneur. Program Outcome: 1. Knowledge and understanding of the range of plant diversity in terms of structure, function and environmental relationships. The role of plants in the functioning of the ecosystem. A selection of more specialized, optional topics. Statistics as applied to biological data. 2. Intellectual skills – able to think logically and organize tasks into a structured form. Assimilate knowledge and ideas based on wide reading and through the internet. 3. Practical skills: Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them depending on their choice of optional modules. a. Interpreting plant morphology and anatomy. b. Plant identification. c. Vegetation analysis techniques. d. A range of physiochemical analyses of plant materials in the context of plant physiology and biochemistry. e. Analyze data using appropriate statistical methods and computer packages. f. Plant pathology to be added for</p>

			<p>sharing of field and lab data abstained.</p> <p>4. Scientific Knowledge: Apply the knowledge of basic science, life sciences and fundamental process of plants to study and analyze any plant form.</p> <p>5. Problem analysis: Identify the taxonomic position of plants, formulate the research literature, and analyze non reported plants with substantiated conclusions using first principles and methods of nomenclature and classification in Botany.</p> <p>6. Design/development of solutions: Design solutions from medicinal plants for health problems, disorders and disease of human beings and estimate the phytochemical content of plants which meet the specified needs to appropriate consideration for the public health</p> <p>7. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern instruments and equipment for Biochemical estimation, Molecular Biology, Biotechnology, Plant Tissue culture experiments, cellular and physiological activities of plants with an understanding of the application and limitations.</p> <p>8. Environment and sustainability: Understand the impact of the plant diversity in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.</p> <p>9. Ethics: Apply ethical principles and commit to environmental ethics and responsibilities and norms of the biodiversity conservation.</p>
	Semester I	BO-111: PLANT LIFE AND UTILIZATION I	<p>Students will learn about the plant and their use to mankind because the human population has been increased day by day and increases their food demand. Whatever resources are present they are not sufficient to this increasing population that's why we want to study as well to search new resources which will fulfill the need of mankind. In this subject i.e. Plant life and utilization-I the students study different types of plants like algae, fungi, lichens & bryophytes. From the above mention curriculum students also learns general characters, classification, life cycle and utilization of <i>Spirogyra</i>, <i>Agaricus</i>, <i>Riccia</i> and various Lichens</p>
		PAPER-II: PLANT MORPHOLOGY AND ANATOMY	<p>Outcome-The external morphological characters of plant are important for evaluation of medicinal plants and their proper identification so students can basically understand and identify the medicinal plants for better life. The anatomical studies are helpful for perfect plant identification of plant organs as well as the individual plant. The qualitative phytochemicals can be estimated with anatomical methods.</p>
SEMESTER-II: PAPER-I: BO-121: PLANT LIFE AND UTILIZATION-II			
SEMESTER-II: PAPER-II: BO-122: PRINCIPLES OF PLANT SCIENCE			
2	SYBSc. Semester I	Paper I: Taxonomy of Angiosperms and	<p>1. Impart an insight into the various plant water relations viz; osmosis, diffusion, active -passive transport, ascent of sap, transpiration pull etc. 2.</p>

		Plant Community	Understand the mechanism of various metabolic processes in plants. 3. Acquire basic knowledge about the plant growth and development. 4. Equip with skills and techniques related to plant physiology like growth measurement, soil pH, water holding capacity of the soil, DPD, plasmolysis, rate of transpiration etc. 5. Describe flowering plants in botanical terms, their identification, uses etc.
		Sem I, Paper II: Plant Physiology	
Sem II, Paper I: Plant Anatomy and Embryology			
Sem II, Paper II: Plant Biotechnology			
	T. Y. B.Sc. Semester-III	Paper- I: BO : 331 Cryptogamic Botany	<ol style="list-style-type: none"> 1. Plants are predominantly eukaryotic, multicellular, photosynthetic & current definition of the Plant Kingdom exclude Bacteria, few Algae (Cyanophyta) & Fungi. 2. Cryptogams as lower plants are thalloid & reproduce by spores. As compared to Phanerogams, the cryptogams due to their size & intricate structure have to be studied as fundamental in botanical courses. 3. Lower Cryptogams- Algae & Fungi are small, microscopic & special methods with apparatus are necessary in fieldwork. 4. Cryptogams have an important role & function in bioprospecting. The vast majority of earth's species are microbial & less than 1% of all species described have been studied beyond SIMPLY NOTING THEIR EXISTENCE. 5. Algae, Fungi along with Bryophyte & Pteridophyte have many ecological, economic & industrial applications which can be grasped by students only if they are well studied in detail in theory & practicals. 6. The proper understanding will facilitate efforts on research and development directed on the Cryptogams.
		Paper II: BO.332: CELL AND MOLECULAR BIOLOGY	<ol style="list-style-type: none"> 1. Understand molecular basis of life. Various process in molecular terms. 2. Exhibit knowledge base in cell biology and molecular biology. 3. Demonstrate the knowledge of common and advanced laboratory practices in cell and Molecular Biology. Particularly cell division, chromosome morphology, chromosome count, DNA isolation and estimation, RNA isolation & estimation etc. 4. Exhibit clear and concise communication of scientific data. 5. Identify cryptogams, different separation techniques like TLC, paper chromatography, Electrophoresis, various steps in plant tissue culture etc.
		Paper III: BO: 333: GENETICS AND EVOLUTION	<ol style="list-style-type: none"> 1. It will enable the students to understand the mechanism, role and importance of cell division, linkage and crossing over. 2. The students will also know the various gene mutations and variations & their adverse effects. 3. Students will know about Genetic Counseling and Gene Therapy
		Paper IV: BO.334: SPERMATOPHYTES AND PALAEOBOTANY	<ol style="list-style-type: none"> 1. It includes Angiosperm Gymnosperm taxonomy as well as the fossilized members. 2. Angiosperm taxonomy helps in identification of various plants from local as well as regional areas. 3. The exploration of biodiversity is always with the help of taxonomy. The students will be absorbed

		NY)	in various Herbarium Institute in India as well as Abroad. 4. The knowledge of taxonomy is helpful for conservation of biodiversity
		Paper –IV BO.335: HORTICULTURE AND FLORICULTURE	1. A subject of applied botany which deals with practice of field & garden cultivation for food, materials, comfort, beauty & aesthetics. 2. It generally deals with garden crops like fruits, vegetables & ornamental plants especially mass cultivation, field as well as greenhouse management practices. 3. It also deals with harvest, post harvest, transportation & marketing strategies which are important for any business enterprises. 4. The subject has wide scope in domestic & International market especially since Government of India has developed a special interest in this field. 5. Students must be able to distinguish between agriculture & horticulture, in order to acquire better theoretical and practical understanding & skills in either specialized field. 6. The proper understanding will facilitate efforts on research and development on specific plants of interest.
		PAPER V: BO 336 - COMPUTATIONAL BOTANY	1. It will enable the students to understand Basic concept of Biostatistics, the terminologies used, handling and representation of data. 2. The students will also know the various tests used for statistical analysis. 3. The students will get abreast with the fundamental concepts of Plant growth indices, vegetation study and computation of vegetation biomass using satellite data. 4. Students will know about biostatistics counselling.
	Semester-IV	Paper I: BO. 341: PLANT PHYSIOLOGY AND BIOCHEMISTRY Paper II: BO.342: PLANT ECOLOGY AND BIODIVERSITY	1. Students will be able to evaluate the tradeoffs occurring among our biological, social, political and economic worlds and will be able to determine the importance of environmental biology. 2. Students will learn how to diminish the effect of pollution and will be able to cope with the global warming side effects.
		PAPER III BO.343: PLANT PATHOLOGY	1. It will enable the students to understand the fundamentals of plant pathology, disease development, and defence mechanism. 2. The students will also know the various defences exerted by the plant against plant pathogens, methods of studying plant diseases. 3. The students will learn about certain fungal, bacterial, Mycoplasma, Nematode, Viral and non-parasitic diseases. 4. Students will know about principles of plant disease control, Molecular Diagnostics and Transgenic in Crop Protection.
		Paper IV: BO.344: MEDICINAL AND ECONOMIC	Anticipated knowledge, skills and/or attitude to be developed by the student are 1. Describe sources and types of genetic variation and explain their importance for plant improvement. 2. Describe the progression of stages within a modern

		<p>BOTANY Paper V: BO. 345 PLANT BIOTECHNOLOGY Paper VI: BO346: PLANT BREEDING AND SEED TECHNOLOGY</p>	<p>breeding programme from the setting of breeding objectives, through the development and implementation of breeding strategies to the commercialization of plant varieties and the protection of intellectual property.</p> <p>3. Describe methods that are used in plant breeding. 4. study about flowering Processes in Plants. Seed Formation and Development. 5. Seed Germination. Seed Viability and Viability Testing. Seed Dormancy. Seed Vigor and Vigor Testing. Seed Storage and Deterioration. 6. Seed Production. Seed Conditioning and Handling. Seed Drying. Seed Enhancements. Seed Certification. Seed Testing. Seed Marketing. Seed Legislation and Law Enforcement. 7. The introduction of quality seed of new varieties and combined with other inputs significantly increased yield level.</p>
--	--	-------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Zoology

Sr. No.	Course	Course Outcomes
1	F.Y.B.Sc. Zoology	CO1. Exposure to diversity in animal groups and industries based on the zoological areas are covered. CO2. Through practical course the students are equipped with skills required for animal identification, morphological, anatomical, technical description, classification and also applications of Zoology in the various industries.
2	S.Y.B.Sc. Zoology	CO1. The level of the theory and practical courses are one step ahead of the first year B.Sc. course based on content of first year syllabus. CO2. The students are informed in Animal Systematics, Animal Diversity and applied field of Zoology such as Fisheries, Apiculture, Sericulture, etc.



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Physics

Sr. No.	Course	Course Outcomes
1	F.Y.B.Sc. Physics 1. Mechanics 2. Heat and Thermodynamics 3. Physics Principles and Applications 4. Electromagnetic 5. Practical	<ol style="list-style-type: none">1. Demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems.2. Use the free body diagrams to analyse the forces on the object.3. Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them.4. Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.5. Analyze the heat engines and calculate thermal efficiency.6. Analyze the refrigerators, heat pumps and calculate coefficient of performance.7. Understand property 'entropy' and derive some thermodynamical relations using entropy concept.8. To demonstrate an understanding of electromagnetic waves and its spectrum.9. Understand the types and sources of electromagnetic waves and applications.10. To understand the general structure of atom, spectrum of hydrogen atom.11. To understand the atomic excitation and LASER principles distributions using Coulomb's law and Gauss's law.12. Demonstrate an understanding of the dielectric and effect on dielectric due to electric field.13. Demonstrate an understanding of the magnetic field for steady currents using Biot-Savart and Ampere's laws.14. Demonstrate an understanding of magnetization of materials.15. Demonstrate an understanding of laboratory procedures including safety, and scientific methods.16. Demonstrate a deeper understanding of abstract concepts and theories gained by experiencing and visualizing them as authentic phenomena.17. Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.

<p style="text-align: center;">2</p>	<p style="text-align: center;">S.Y.B.Sc. Physics</p> <ol style="list-style-type: none"> 1. Mathematical Methods in Physics 2. Electronics I 3. Oscillations, Waves and Sound 4. Optics 5. Practical 	<ol style="list-style-type: none"> 1. Understand the complex algebra useful in physics courses 2. Understand the concept of partial differentiation. 3. Understand the role of partial differential equations in physics 4. Students gain theoretical concepts of the electronic circuit design, instrumentations, and practical work along with hands-on experiences of the practical work. 5. Explain oscillation in terms of energy exchange, giving various examples. 6. Solve problems relating to undamped, damped and force oscillators and superposition of oscillations. 7. Understand the mathematical description of travelling and standing waves. 8. Recognise the one-dimensional classical wave equation and solutions to it. 9. Calculate the phase velocity of a travelling wave. 10. Explain the Doppler effect, and predict in qualitative terms the frequency change that will occur for a stationary and a moving observer. 11. Define the decibel scale qualitatively, and give examples of sounds at various levels. 12. Explain in qualitative terms how frequency, amplitude, and wave shape affect 13. Students understands different theoretical concepts of optics such as interference, polarization, diffraction etc. and are able to analyze the examples based on these concepts. 14. Whatever the students learned in their theory courses such as, electronics, waves, oscillations and sound and optics. They need to verify these concept. This course will help to student to verify the concept from theory.
--------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Mathematics

Sr. No.	Course	Course Outcomes
1	FYBSc Algebra and Geometry	Prove results involving divisibility and greatest common divisors; Applications of Modular Arithmetics. Solve systems of linear equations; <input type="checkbox"/> Find integral solutions to specified linear Diophantine Equations; <input type="checkbox"/> Apply Euler-Fermat's Theorem to prove relations involving prime numbers; <input type="checkbox"/> Apply the Wilson's theorem. <input type="checkbox"/> Polynomial addition, subtraction, division, multiplication, roots of polynomials. <input type="checkbox"/> Transformation, translation and reflection; <input type="checkbox"/> Used cut-out shapes as a means to develop the mental transformation of geometric shapes.
	FYBSc Calculus and Differential Equations	Be able to solve algebraic equations and inequalities involving the square root and modulus function understand the difference between equations and identities, and be able to prove simple identities and inequalities <input type="checkbox"/> Be able to recognize odd, even, periodic, increasing, decreasing functions <input type="checkbox"/> Understand the operation of composition of functions . <input type="checkbox"/> Be able to calculate limits by substitution and by eliminating zero denominators <input type="checkbox"/> Be able to calculate limits at infinity of rational functions <input type="checkbox"/> Be able to calculate limits in indeterminate forms by a repeated use of l'Hopital's rule
	SYBSc (SemI) Multivariable Calculus I	Perform standard operations on vectors in two-dimensional space and threedimensional space <input type="checkbox"/> Compute the dot product of vectors, lengths of vectors, and angles between vectors <input type="checkbox"/> Compute the cross product of vectors and interpret it geometrically <input type="checkbox"/> Determine the equations of lines and planes using vectors <input type="checkbox"/> Identify various quadric surfaces through their equations <input type="checkbox"/> Sketch various types of surfaces <input type="checkbox"/> Define vector functions of one real variable and sketch space curves <input type="checkbox"/> Compute derivatives and integrals of vector functions

		<input type="checkbox"/> Find the arc lengths and curvatures of space curves <input type="checkbox"/> Find the velocity and acceleration of a particle moving along a space curve
	SYBSc (SemI) Laplace Transform and Fourier Series	<input type="checkbox"/> Able to understand the Laplace transform of elementary functions. <input type="checkbox"/> Able to use the rules of integration & definition of Laplace transform students to prove the properties of Laplace transform. <input type="checkbox"/> Learns the topics inverse Laplace transform, application of Laplace transform helps to solve linear higher order differential equation , system of differential equations.
	SYBSc (SemII) Linear Algebra	<input type="checkbox"/> Understand the basic ideas of vector algebra: linear dependence and independence and spanning; <input type="checkbox"/> Know how to find the row space, column space and null space of a matrix, and be familiar with the concepts of dimension of a subspace and the rank and nullity of a matrix, and to understand the relationship of these concepts to associated systems of linear equations;
	SYBSc (SemII) Multivariable Calculus II	<input type="checkbox"/> How to deals with vector valued functions <input type="checkbox"/> To understand topics like line integral ,surface integral which generalize integration to functions defined on curves & surfaces. <input type="checkbox"/> To understanding the computation of work done ,flux,mass,area of the surfaces. <input type="checkbox"/> To understand the Greens theorem , Stokes theorem ,divergence theorem that teaches the relation between integration of functions over surfaces & its boundry,solids & its surface



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Marathi

Sr. No.	Program	Program Specific Outcomes
1	B.A. Marathi	१. मराठी साहित्याविषयी रूची निर्माण करणे. २. जीवन जाणीवा विकसित करणे. ३. व्यक्तिमत्व विकासात भाषेचे महत्व विकसित करणे. ४. साहित्य निर्मितीचे कौशल्य प्राप्त करणे. ५. साहित्य प्रकाराची मांडणी आत्मसात करणे.
	F.Y.B.A. व्यवहारिक व उपयोजित मराठी	१. संज्ञापनातील भाषेची भूमिका, विविध भाषिक अविष्कारांचे स्वरूप समजते. भाषिककौशल्ये, क्षमता विकसित होतो. २. भाषिक कौशल्यांचे विविध अविष्कार आणि संपर्कमाध्यमे यांचा परस्पर संबंध समजतो. ३. मराठीचा कार्यकालीन/व्यवसायिक कामकाजात वापर, गरज व स्वरूपविशेषांची माहिती होते.
	S.Y.B.A G आधुनिक मराठी साहित्य आणि उपयोजित मराठी	१. शुध्दलेखनाची ओळख होते. २. पारिभाषिक संज्ञांची ओळख होते. ३. चरित्र-आत्मचरित्र या साहित्यप्रकारांच्या तात्विक घटकांचे ज्ञान होते.
	S.Y.B.A S-1 मराठी साहित्यातील विविध साहित्य प्रकार	१. मराठी साहित्यप्रकारांच्या तात्विक घटकांचे ज्ञान होते. २. वेगवेगळ्या कालखंडातील मराठीतील अभिजात साहित्यकृतींचा संस्कार घडवतो.
	S.Y.B.A S-2 अर्वाचिन मराठी वाडःमयाचा इतिहास	१. विशेषस्तरावर अभ्यासाचा प्रारंभ होत असताना, मराठी साहित्याच्या ऐतिहासिक परंपरेचे ओळख होते. २. विशिष्ट कालखंडाच्या पार्श्वभूमीवर साहित्यामागील प्रेरणा, प्रवृत्तींचे ज्ञान होते.
	T.Y.B.A G3 आधुनिक मराठी साहित्य आणि व्यवहारिक व उपयोजित मराठी	१. आधुनिक मराठी साहित्यातील विविध साहित्यप्रकारांचा परिचय होऊन त्यांचे आकलन होते. २. नेमलेल्या कलाकृतींच्या संदर्भात साहित्यपरंपरेचा स्थूल परिचय होतो.
	T.Y.B.A. S3 साहित्य विचार	१. साहित्याचे स्वरूप समजते. २. साहित्याची प्रयोजने समजतात. ३. साहित्यनिर्मितीची प्रक्रिया समजते.
	T.Y.B.A. S4 भाषा विज्ञान	१. भाषेचे स्वरूप व कार्य भाषेच्या अभ्यासाचे महत्व, भाषेचे अभ्यासाची प्रमुख अंगे कळतात. २. भाषा म्हणजे काय व तिचे मानवी जीवनातील कार्य समजते.



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Hindi

Sr. No.	Program	Program Specific Outcomes
1	FYBA G-I हिंदी	साहित्य के माध्यम से राष्ट्रीय एवं सामाजिक ऐक्य की भावना निर्माण होती है। हिंदी भाषा के प्रसार में योगदान बढ़ाता है।
2	FYBCom हिंदी	छात्रों को हिंदी के गद्य एवं पद्य के प्रतिनिधी रचनाकारों का परिचय होता है। हिंदी साहित्य के प्रति छात्रों की रूचि बढ़ाता है। राष्ट्रीय ऐक्य, सामाजिक उत्तरदायित्व, वैज्ञानिकता आदि मूल्यों के प्रति जाग्रति होती है।
3	SYBA G-2 सामान्य हिंदी	छात्रों को हिंदी आत्मकथा विधा तथा हिंदी की दीर्घ कविता/काव्य नाटक के विकास तथा उनके स्वरूप का परिचय होता है। छात्रों का पारिभाषिक शब्द तथा संक्षिप्तियों के माध्यम से सरकारी कार्यालय में प्रयुक्त की जानेवाली कार्यालयीन हिंदी से परिचित होती है।
4	SYBA S-1 हिंदी भाषा का विकास	छात्रों को भाषा की परिभाषा विशेषताएं तथा भाषा के विविध रूपों की जानकारी होती है। हिंदी की बोलियों तथा भाषा विकास के प्रमुख वादों का परिचित हो जाता है। भाषा विज्ञान का अन्य विज्ञानों से संबंध समझ में आता है।
5	SYBA S-2 हिंदी विशेष-२ उपन्यास, नाटक तथा मध्ययुगीन हिंदी काव्य.	छात्रों में इस पाठ्यक्रम के कारण विश्लेषण की क्षमता बढ़ी। स्वाध्याय लेखन में छात्रों की रूची बढ़ी। काव्यपाठ के लिए छात्र तैयार हुए। समूह चर्चा के छात्र भाग लेने लगे।
6	TYBA G-3 सामान्य हिंदी	छात्रों को हिंदी आत्मकथा विधा तथा हिंदी की दीर्घ कविता/काव्य नाटक के विकास तथा उनके स्वरूप का परिचय होता है। छात्रों को पारिभाषिक शब्द तथा संक्षिप्तियों के माध्यम से सरकारी कार्यालय में प्रयुक्त की जानेवाली कार्यालयीन हिंदी से परिचित होता है।
7	TYBA S-3 हिंदी साहित्य	साहित्य के इतिहास की लेखन परंपरा से अवगत होता है। हिंदी साहित्य की प्रतिनिधी रचनाओं और रचनाकारों का महत्व, प्रदेय, पूर्ववर्ती तथा परवर्ती प्रभाव होता है। हिंदी साहित्य के विकासक्रम तथा हिंदी साहित्य के इतिहास के माध्यम से साहित्य और युग जीवन का संबंध विषद होता है।
8	TYBA S-4 काव्यशास्त्र	साहित्य की पारिभाषाओं द्वारा काव्य के स्वरूप के साथ काव्य हेतू तथा काव्य के प्रयोजनों का ज्ञान मिलता है। काव्य के तत्त्व, काव्य के भेद तथा शब्दभाषित का ज्ञान मिलता है। अलंकार, छंदों के स्वरूप के साथ उनका सोदाहरण परिचय मिलता है। गद्य-भेदों के साथ नाटक, एकांकी और निबंध के स्वरूप एवं तत्त्वों की जानकारी, रस का स्वरूप, रस के अंगों एवं भेदों का परिचय मिलता है।



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of English

Sr. No.	Program	Program Specific Outcomes
1	B.A. English	<ol style="list-style-type: none">1. Students are familiarized with excellent pieces of prose and poetry in English to realize the beauty and communicative power of English2. Students are exposed to native cultural experiences and situations and develop humane values and social awareness3. Development of overall linguistic competence and communicative skills of the students4. Students are exposed to the basics of literature and language5. Students are familiarized with different types of literature in English, the literary devices and terms and they understand the literary merit, beauty and creative use of language6. Students are familiarized with the basic units of language to become aware of the technical aspects and their practical usage7. Students are prepared for a detailed study and understanding of literature and language8. Development of an integrated view about language and literature



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Geography

Sr. No.	Program	Program Specific Outcomes
1	B.A. Geography	Understand the nature and basic concept of Geomorphology, Climatology, tourism geography, Regional geography
2	F.Y.B.A. Gg- 110- Elements of Geomorphology (G-1)	I. To introduce the students to the basic concepts in Geomorphology. II. To introduce latest concepts in Geomorphology. III. To acquaint the students with the utility and application of Geomorphology in different regions and environment.
3	S.Y.B.A. Gg 210: Elements of Climatology and Oceanography (G-2)	I. To introduce the students to the basic principles and concepts in Climatology and Oceanography II. To acquaint the students with the applications of Climatology and Oceanography in different areas and environment III. To make the students aware of the Planet Earth and thereby to enrich the student's Knowledge
	Gg- 220- Tourism Geography (S-1)	I. To acquaint the student's basic concepts of Geography & Tourism. II. To aware the students with the utility and application of Tourism III. To help the students & society to understand the interrelationship between tourism and employment generation opportunities.
	Gg- 201- Fundamentals of Geographical Analysis (S-2)	I. To enable the students to use various Projections and Cartographic Techniques II. To acquaint the students with basic of Statistical data III. To acquaint the students with the principles of surveying, its importance and utility in the geographical study

4	<p style="text-align: center;">T.Y.B.A. Gg.: 310 Regional Geography of India (G-3)</p>	<p>I. To acquaint the students with geography of our Nation. II. To make the student aware of the magnitude of problems and Prospects at National level. III. To help the students to understand the inter relationship between the subject and the society.</p>
	<p style="text-align: center;">Gg-320 – Agricultural Geography (S-3)</p>	<p>I. To Introduce students Agricultural activities and its relation with Geography. II. To Familiarize the students with new modern technical methods and their applications in Agricultural activities. III. To enable students to apply Previously knowledge in Problems and Prospects in agriculture</p>
	<p style="text-align: center;">Gg.301: Techniques of Spatial Analysis (S-4)</p>	<p>I. To Introduce the Students with SOI Toposheets and to acquire the knowledge of Toposheets Reading/Interpretation II. To familiarize the students with the weather instruments and their applications in Geographical phenomena III. To acquaint the students with IMD weather maps and to gain the knowledge of weather map</p>



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of History

Sr. No.	Program	Program Specific Outcomes
1	B.A History	<p>1.To Introduce innovative study techniques in the study of History of Maratha to make it value based, conceptual and thought provocative. To introduce International elements in the study of Marathas to facilitate comparative analysis of this history. To highlight the importance of past in exploration of present context. To understand the Socio –economic, cultural and political background of 17th century Maharashtra. To increase the spirit of healthy Nationalism & Secularism among the student. To encourage student s to for competitive examinations. To promote interest in the discipline of History. Suggesting the Importance of References.</p> <p>2.The course is designed to help the student to know- History of freedom movement of India, aims, objectives problems and progress of Independent India. It aims at enabling the student to understand the processes of rise of modern India. The Course attempts to acquaint student with fundamental aspects of Modern Indian History. To explain the basic concepts/ concerns/ frame work of Indian History</p> <p>3. To Survey the sources of History of Ancient India. The Course intends to provide an Understanding of the social, economic, religious and institutional bases of Ancient India. The course will study such as agriculture, Industry, trade. To study the development of the concept of Nation-State background of p</p>
2	History General Paper No. 1 Chh. Shivaji and His Times (1630 – 1707)	<p>Introduce innovative study techniques in the study of History of Maratha to make It value based, conceptual and thought provocative. Introduce International Elements in the study of Marathas to facilitate comparative analysis of this history. Highlight the importance of past in exploration of present context. understand the Socio –economic, cultural and</p>
3	S.Y.B.A. (History) Modern- India (1857-1950) General Paper 2	<p>The course is designed to help the student to know- History of freedom movement of India, aims, objectives problems and progress of Independent India. It aims at enabling the student understand the processes of rise of modern India. The Course</p>

		attempts acquaint student with fundamental aspects of Modern Indian History. explain the basic concepts/ concerns/ frame work of Indian History
	S.Y.B.A. History Special Paper - I, Ancient India (3000 B.C. to 1206 AD)	Survey the sources of History of Ancient India. The Course intends to provide an Understanding of the social, economic, religious and institutional bases of Ancient India. The course will study such as agriculture, Industry, trade. Study the development of the concept of Nation- State background of political history. Study ancient Indian Art & Architecture
	S.Y.B.A. (History, special Paper -II) From 2014-2015 History of Modern Maharashtra (1818 to 1960)	The purpose of the course is to enable the students to study the history of modern Maharashtra .Highlight the ideas, institutions, forces and movements that contributes to the modern Maharashtra. Acquaint the students with various interpretative perspectives. Introduce the student to the regional history within a broad national framework.
4	T.Y.B.A. G-3 = HISTORY OF THE WORLD IN 20TH CENTURY (1914-1992)	1. Help the student to know Modern World. Acquaint the student with the Socio-economic & Political
	T.Y.B.A INTRODUCTION TO HISTORY LEVEL: S3	1. Orient students about how history is studied, written and understood. 2.Explain methods and tools of data collection 3. Understand the meaning of Evolution of Historiography. 4. Study the Various Views of Historiography.
	T.Y.B.A HISTORY OF USA (1914 – 1992) LEVEL: S4	1. Acquaint Students about the rise and development of the USA as a world power. 2. Acquaint Students about the main



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Political Science

Sr. No.	Program	Program Specific Outcomes
1	FYBA G-I Indian Government And Politics	<p>i. It focuses in detail on the political processes and the actual functioning of the political system.</p> <p>ii. It simultaneously studies in detail the political structure both Constitutional and Administrative.</p> <p>iii. It emphasizes on local influences that derive from social stratification of castes and jatis, from language, religion, ethic and economic determinants and critically assesses its impact on the political processes.</p>
2	SYBA G – 2 Political Theory & Concepts	<p>i. It introduces the concepts, ideas and theories in political theory.</p> <p>ii. It seeks to explain the evolution and usage of these concepts, ideas and theories with reference to individual thinkers both historically and analytically.</p> <p>iii. 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</p>
	SYBA S-1 Western Political Thoughts	<p>i. It studies the classical tradition in political theory from Plato to Marx with the view to understand how the great Masters explained and analyzed political events and problems of their time and prescribed solutions.</p> <p>ii. The texts are to be interpreted both in the historical and philosophical perspectives to understand the universality of the enterprise of political theorizing.</p> <p>iii. The limitations of the classical tradition, namely its neglect of women's concerns and issues and the non-European world are critically examined.</p>
	SYBA S-2 Political Sociology	<p>i. The purpose of this course is to explain the non - institutional political processes and thereby to</p>

		<p>sensitize the students on informal processes of politics.</p> <p>ii. To provide a deeper understanding of the concepts and approaches related to political sociology.</p> <p>iii. To explain the social context of politics</p>
3	TYBA G-3 local Self Government in Maharashtra	<p>i. To introduce the students to the structure of Local Self Government of Maharashtra.</p> <p>ii. To make students aware of the various Local Self Institutions, their functions, compositions and importance.</p> <p>iii. To identify the role of Local Government and Local Leadership in development.</p>
	S-3 Public Administration	<p>i. It is an introductory course in Public Administration.</p> <p>ii. The essence of Public Administration lies in its effectiveness in translating the governing philosophy into programmes, policies and activities and making it a part of community living.</p> <p>iii. It 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.</p>
	S-4 International Politics	<p>i. It 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.</p> <p>ii. 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.</p> <p>iii. 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 armaments.</p>



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Economics

Sr. No.	Program	Program Specific Outcomes
1	FYBA CO1. - G1- Indian Economy Problems & Prospects	To make the students known about the various sectors of the economy in detail. To highlight the potential of the Indian economy to study the facts and figures about development.
2	SYBA G2-Modern Banking	To create the awareness of the student of modern banking system. Understanding of the opportunities of banking their interaction with rest of the economy essential to realize how monetary force operates through multitude of channels.
	S1-Micro Economics	To understand the behaviour of an economic agent namely; a consumer, a producer, a factor owner and the price fluctuations in a market. Price formation in different markets structure and the equilibrium of a firm and industry.
	S2-Macro Economics	To understand the economic analysis in terms of theoretical, empirical as well as policy-making issues. The objective of the course is to familiarize the students the basic concepts of Macro economics and applications.
3	TYBA G3-Economic Development & Planning	This paper is devoted to the theories of economics development, approaches to economic development, social and institutional aspects of development, constraints on development process, macroeconomic policies, role of foreign capital and economic planning in developing countries.
	S3-International Eco.	Course provide the students a through understanding and deep knowledge about the basic principles that tent to govern the free flow of trading goods and services at the
	S4-Public Finance	To understand the policies and operations which involve the use of tax and expenditure measures while budgetary policy. It helps to understand expenditure program, budgetary procedures, stabilizations instruments, debt issues, levels of the government, etc.



Satyaniketan's

Adv. M. N. Deshmukh Arts, Science and Commerce College, Rajur

Tal – Akole, Dist.-Ahmednagar 422 604.

Email – mndcollegerajur@gmail.com

Ph. No. 02424-251080

Department of Commerce

Sr. No.	Program	Program Specific Outcomes
1	FYBCom Financial Accounting	1. To impart the knowledge of various accounting concepts 2. To instill the knowledge about accounting procedures, methods and techniques. 3. To acquaint them with practical approach to accounts writing by using software package.
2	Business Economics (Micro):	1. To expose Students of Commerce to basic micro economic concepts and inculcate an analytical approach to the subject matter. 2. To stimulate the student interest by showing the relevance and use of various economic theories. 3. To apply economic reasoning to problems of business.
3	Banking and Finance [Fundamentals of Banking]	1. To acquaint the students with the fundamentals of banking. 2. To develop the capability of students for knowing banking concepts and operations. 3. To make the students aware of banking business and practices. 4. To give thorough knowledge of banking operations. 5. To enlighten the students regarding the new concepts introduced in the Banking system.
4	Marketing and Salesmanship [Fundamentals of Marketing]	1) General Objective of the Paper. a) To create awareness about market and marketing. b) To establish link between commerce/Business and marketing. 2) Core Objectives of the paper. a) To understand the basic concept of marketing. b) To understand marketing philosophy and generating ideas for marketing research. c) To know the relevance of marketing in modern competitive world. d) To develop an analytical ability to plan for various marketing strategy.
5	SYBCom Business Communication	1. To understand the concept, process and importance of communication. 2. To develop awareness regarding new trends in business communication. 3. To provide knowledge of various media of communication. 4. To develop business communication skills through the application and exercises.

6	Corporate Accounting	To enable the students to develop awareness about Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards. 1. To make aware the students about the conceptual aspect of corporate accounting 2. To enable the students to develop skills for Computerized Accounting
7	Business Economics (Macro)	1. The objective of the course is to familiarize the students the basic concept of Macro Economics and application. 2. To Study the behavior of the economy as a whole. 3. To Study the relationship among broad aggregates.
8	Business Management	1. To provide basic knowledge & understanding about business management concept. 2. To provide an understanding about various functions of management.
9	Elements of Company Law	1) To impart students with the knowledge of fundamentals of Company Law. 2) To update the knowledge of provisions of the Companies Act of 2013. 3) To apprise the students of new concepts involving in company law regime. 4) To acquaint the students with the duties and responsibilities of Key Managerial Personnel. 5) To impart students the provisions and procedures under company law.
10	Cost and Works Accounting	To Impart The Knowledge Of: 1. Basic Cost concepts. 2. Elements of cost. 3. Ascertainment of Material and Labour Cost.
11	Business Management	1. To provide basic knowledge about various forms of business organizations 2. To acquaint the students about business environment and its implications thereon. 3. To aware them with the recent trends in business
12	TYBCom Business Regulatory Framework (Mercantile Law)	1. To acquaint students with the basic concepts, terms & provisions of Mercantile and Business Laws. 2. To develop the awareness among the students regarding these laws affecting business, trade and commerce.
13	Advanced Accounting	To impart the knowledge of various accounting concepts To instill the knowledge about accounting procedures, methods and techniques. To acquaint them with practical approach to accounts writing by using software package.
14	Auditing & Taxation	The Study of Various Components of this course will enable the students: 1. To acquaint themselves about the concept and principles of Auditing, Audit process, Assurance Standards, Tax Audit, and Audit of computerized Systems. 2. To get knowledge about preparation of Audit report. 3. To understand the basic concepts and to acquire knowledge about Computation of Income, Submission of Income Tax Return, Advance Tax, and Tax deducted at Source, Tax Collection Authorities under the Income Tax Act, 1961.

15	Cost and Works Accounting II	1. To provide Knowledge about the concepts and principles application of Overheads 2. To provide also understanding various methods of costing and their applications
16	Cost and Works Accounting III	1 To impart knowledge regarding costing techniques. 2 To provide training as regards concepts, procedures and legal Provisions of cost audit.
17	International Economics	To acquaint the students with the basic concepts in finance and production functions of a business enterprise.