Sillod Shikshan Sanstha Aurangabad

Siddharth Arts, Commerce & Science College, Jafrabad

Tq. Jafrabad Dist:Jalna

(Maharasthra) 431206

PROGRAMME OUTCOMES

PROGRAMME SPECIFIC OUTCOMES

&

COURSE OUTCOMES

Faculty of Arts.

PROGRAMME OUTCOMES

01	Demonstrate the ability to behave ethically in academic and applied settings.
02	The literature component in languages curriculum provides learners with learning experiences.
03	Enhance the critical and analytical skills.
04	Encourage self-expression & creativity.
05	Appreciate & enjoy literary genres.
06	Develop the skill to analyze, interpret and understand the social , political . economical & historical texts.
07	Develop the good human beings and responsible citizens of India.
08	Prepare for facing global challenges.
09	Encourage for employability and entrepreneurship.

PROGRAMME SPECIFIC OUTCOMES

01	On successful completion of the programme the learners will be accurate both in speaking & writing.
02	They will express a thorough command of languages and their linguistic structures.
03	To develop the knowledge of politics, economics, social sciences & public administration.
04	Their research ability will be develop in all languages & social sciences.
05	The students will be prepared for competitive examinations.
06	To develop the basic concepts of social sciences.
07	Effectively communicate ideas related to the literary works and works of social

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	sciences.
08	To address socio-economic challenges related to all aspects.
09	The students will acquired the knowledge of languages and subjects from social sciences.

COURSE OUTCOMES

Department of Marathi.

Marathi-SL	Developed the knowledge of prose, poetry
	Understood the function of Marathi language in life.
Paper I/III	To acquaint students with the literary genres – poetry & story.
Paper II/IV	Helping students for using Marathi language in daily life.
	Understood the formal & Informal language.
Paper V/VII	Understanding the nature and features of modern Marathi literature.
	To study the socio-cultural and political background of 1800 to 1920.
Paper V/VIII	Developed writing skill for media.
	Developed expression skill.
Paper IX/XIII	Introduce the work & thoughts of Indian & Western authors.
Paper X/XIV	Acquainted with modern linguistics.
	To improve the knowledge of Marathi grammar & essay writing.
Paper XII/XVI	Developed the skill of project writing.
	Developed the presentation and documentation skill.

Department of English

English-(Comp.)	Learning Language skill – I / II
	Strengthen students ability in listening, speaking , reading & writing both at practical and theoretical level.
	Introduced the grammatical properties in order to enable them to write and speak English correctively.
	Acquainted students with a keen and subtle way in which the English language is used.
	Trained both in precision and appropriate of language through prose reading.
Opt. I / III	Introduction of Language.
Opt. II /IV	Introduction of Literature.
	Introduced advance knowledge of English in matter of speaking and writing.
	Helping students towards batter pronunciation.
	Acquired the structure of English language.
	Understood various forms of literature and critically interact with them from different perspectives.
	Understood appropriate literary strategies to read literature.
Opt. V/VII	Literature in English – 1550-1750.
Opt. VI /VIII	Literature in English – 1750-1900.
	Understood various forms of literature and critically interact with them from different perspectives.
	Understood appropriate literary strategies to read literature.
	Unraveled many meanings in a literary text.
	Acquired knowledge how literary language deviates from ordinary language.
Opt. IX/XIII	Twentieth century English literature.

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Opt. X/XIV	Introduction to literary criticism & terms.
Opt. XI/XV	American literature / Indian writing in English.
Opt. XII/XVI	Project work.
	Introduced modern English literature as production of the age.
	To familiarize the students with the literary terms & introduce to them the various streams in literary criticism and develop them skills for literary evaluation.
	Helping students to approach and appreciate Indian literature.
	Helping students to approach & appreciate American literature & its diverse cultures reflected in writing.
	Understood the background of English literature.
	Acquired skill of project writing & documentation.
B.Com. I	
B.Com. II	English for Entrepreneurs.
	Achieved excelled business communication skills for better employment.
	Introduced multi business communication skills.
	Inspired students for enterprise through prose reading
	Strengthen students writing skill through grammar.
	Acquired knowledge of pronunciation.

Department of Hindi

Opt. I/II	Acquainted with the genre of novel.
	Introduced various novelists in Hindi literature.
	Acquainted with the genre of prose writing and notable prose writers.
	Developing the literary interest in Hindi literature.
Opt. V/VII	Acquainted with modernity in Hindi literature.
	Appreciated the modern poetry in Hindi literature.
	Developed interest in poetry.
Opt. IX/XVI	Getting acquainted with poetics in Hindi.
	Introduced Characteristics of medieval Hindi literature & writers of the period.
	Developed the presentation and documenter skill.

Department of History

Opt. I/V	Understood the history of Marathas, during period- 1707-1818, 1880-1905.
	Acquainted students with 20th century Maharashtra – 1905-1960
	Developed the interest in history.
Opt. V/VIII	Understood the history of early India (1630-1707), history of India during the period (B.C.300-A.D.650)
	Acquainted with history of Delhi sultaneet and Mughal India.
Opt. IX/XVI	Acquired the knowledge of historiography, Indian National movement (AD-1885-AD1947).
	Understood the landmarks in the history of modern world, glimpses of history of Marathwada.
	Women's straggle in modern India.
	Acquired the skill of project writing, research methodologies.

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Department of Sociology

Opt. I/IV	Acquainted with nature, scope and development of Sociology.
	Introduced the interest in Sociology.
	Developed interest in Sociology.
	Getting information of related issues in Sociology.
Opt. V/VIII	Understood Indian social structure.
	Understood concepts, factors and obstacles in brining social change.
	Created awareness Indian Religions.
	Understood the status of population, problems of population its impact on society and development.
Opt. IX/XVI	Acquainted with sociological traditions, urban sociology, social theories & urban society in India.
	Developed the skill of project writing.
	Introduced various research methodologies in social sciences.

Department of Economics

Opt. I/IV	Ability to understand the micro economics, price theory.
	Acquired knowledge regarding the price theory.
	Understood the concept of money and banking, Indian economy.
Opt. V/VIII	Ability to understand the macro economic, Public finance.
	Acquired knowledge of development economics.
	Understood statistical methods.
Opt. IX/XVI	Development the knowledge of research methodology.
	Development of project writing skill.
	Acquired the knowledge of economy of Maharashtra International economy and industrial economy.

Department of Political Science

Paper – I	Basic concepts of Political.
	To acquaint students with basic concept of Political Science.
Paper -II	Helping students for understand formation of Government and Politics of Maharashtra.
Paper-V/VI	Understanding formation of Indian Government and Indian Politics.
	Identify the structure of Constitution, Parliament and role of legislate Executive & judiciary.
	To know the international relations.
Paper-IX/X/XI/XII	Understanding Indian Political thinkers and Western Political thinkers.
	Knowing Political ideologies.
	Developing Project Writing skills.

Department of Public Administration

Paper –I/VI	To understand nature, scope and Principals of Public Administration.
	To comprehend the district administration, Maharashtra administration.
	To know the process of administration in India.
Paper-V/VIII	To comprehend the personal administration, panchayat raj, financial administration.
	Understanding urban local self government, rural development.
	To identify the problems in urban local self government and rural development.
Paper-XI/XVI	Understanding the contribution of administration thinkers.
	Appreciate the changing paradigms of human resource management.
	Understanding recent trends in Public Administration & important cows.
	Develop the skill of Project writing skill.

Faculty of Commerce

Programme Outcomes

01	Information about the trade & Commerce
02	Accounting Standard and its Principle
03	Entrepreneurship Development
04	Management for Business growth, Development & Research
05	Self improvement through Marketing and Accounting
06	Self controlling of financial Crises
07	Information about computer accounting
08	Improvement in social and educational Skill
09	Success in Bunnies Enterprise through Business Legislation Accuracy in calculation of profit
10	Knowledge about organizational Behavior
11	Details information about business economic
12	Information Literacy in Business Statics
13	Success in Decision Making
14	Techniques of ration analysis

Programme Specific Outcomes

1.	Knowledge about trade and commerce regarding recording, maintaining and presenting the accounting and financial fact
2.	Knowledge about logical reasoning, ability and interpretation
3.	Best Practices in Principal of Business economic
4.	Knowledge about computer skills and technology tools for business operation
5.	Knowledge about the Dynamic new trends of entrepreneurship
6.	Best Practices in preparing and organization's accounts

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Course Outcomes

1	To specific fact about principal of Management
2	To analysis and evaluation of capital & revenue Expenditure
3	To identify problems in Business Mathematics & Statics
4	To solve critical problems in Management accounting & financial accounting
5	To provide best practice in business legislation
6	To select best theories of Business organization and management
7	To know specific facts about financial management & Marketing management
8	To fact about entrepreneurship development
9	To provide best business communication and information technology
10	To indentify computer Application in Business
11	To specific fact & knowledge about goods and service tax
12	To define and analysis of Business & Industrial economic
13	To identify and analysis of new auditing trends
14	To know specific facts in Human resource management.
15	To specific fact about rural development and agricultural business.

Department of Computer Science

Co.1	To understand the basic language of computer.
	To understand implementation teaching.
	To develop concept of algorithms.
Co.2	To analyze the problem & develop algorithm related knowledge.
	To analyze & formatting the problem.
	Students acquainted with architectural elements.
Co.3	Acquire knowledge in software requirements, analyze & security.
	Provide basic knowledge on core concept of computer science.
Co.4	Empowered with analytical mind & critical thinking.
	Students able to communicate the technical aspects of system.
	Student possess employability & enter- prenarship skills.

Department of Physics

Program Outcome

01	Graduate students develop scientific attitude in fields of physical chemical mechanical physical science
02	students acquire scientific knowledge to extract information formulate and solve problems in scientific manner
03	Winds acquire scientific skills to handle basic laboratory instruments repairing models circuits
04	Approach data collection and decision making
05	Nuclear physics for sustainable development

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Course outcome

B.Sc. F.Y.	Mechanics and properties of matter and sound(101)
	Heat and thermodynamics(102)
	Geometrical and physical optics(104)
	Electricity and magnetism(105)
	Lab course(103 & 106)
	➢ To understand study the viscosity and surface tension and ultrasonic waves
	➢ The concept of thermodynamics entropy and thermodynamic reaction
	➢ To identify optical uses and handling of optics instruments
B.Sc. S.Y.	Mathematical statistical physics and relativity(201)
	Modern and nuclear physics (202)
	Solar photovoltaic energy (205)
	Oscillations waves and sound (206)
	Lab course(203, 204, 207 & 208)
	➢ Understand concept of relativity
	➢ Understand the photoelectric effect
	➢ Study the uses and applications of solar cells in daily life
B.Sc. T.Y.	Classical and Quantum mechanics(301)
	Electrodynamics (302)
	Atomic molecular physics and laser(305)
	Non conventional energy sources and optical fibre(306)
	Lab courses(303, 304, 307 & 308)
	➢ To understand the mechanics of partial classification constraints
	➢ Understand do time varying field electromagnetic waves
	➢ Use of laser in daily life
	➢ To understand the fibre cables and fabrication in electronic industries

Department of Chemistry

Program Outcome

	Student learn all the basic concept of Chemistry.
	Use and application of all the discipline of chemistry.
	Student learn importance of chemistry in daily life and also he follow chemistry in his life.
	syllabus create awareness and importance of chemistry on environment economics and industry.
	Student get knowledge to analyse different thing using spectrochemical techniques like UV, IR, NMR, Mass spectra etc.
	Student come to know importance of chemistry in higher education and opportunities.

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Course outcome

B.Sc. F.Y.	Inorganic chemistry-I, Organic chemistry-II, Physical chemistry-V Inorganic chemistry - VI, Lab course – III, IV, VII & VIII.
	➢ Student learn all basic concept of chemistry such as periodic table atom atomic structure basic concept of different chemical reactions.
	➢ Student come to know the branches of chemistry.
B.Sc.S.Y.	Organic chemistry – IX, Physical chemistry – X, Inorganic chemistry – XIII, Physical chemistry – XIV, Lab course – XI, XII, XIV & XVI.
	➢ Student learn mathematical concept of chemistry.
	➢ Relationship of chemistry with other subjects .
	➢ Student create his own idea to understand chemical reactions and their mechanisms.
B.Sc.T.Y.	Physical chemistry – XVII, Organic chemistry – XVIII, Inorganic chemistry – XXI, Organic chemistry – XXII, Lab course – XIX, XX, XXIII & XXIV.
	➢ Student come to know the importance of chemistry for industrial development.
	➢ Student learn to interpret different spectral analysis for the samples.
	➢ Student learn synthesis, separation and identification of different organic and inorganic compounds.

Department of Botany

Course Outcome:

The undergraduate (UG) course offered by Dr. BabasahebAmbedkarMarathwada University Aurangabad. The course is a combination of general and specialized education, simultaneously introducing the concepts of breadth and depth in learning. The fundamental aim of UGcourse is to produce competent plant biologists who can employ and implement their gained knowledge in basic and applied aspects that will profoundly influence the prevailing paradigm of agriculture, industry, healthcare and environment to provide sustainable development. The present curriculum will not only advance theirknowledge and understanding of the subject, but will also increase the ability of critical thinking,development of scientific attitude, handling of problems and generating solution,improve practical skills, enhance communication skill, social interaction, increase awareness in environment related issues and recognize the ethical value system.Additionally the training provided to the students will make them competent enough for doing PG Course and research in Plant Science and to prepare the students for lifelong learning by drawing attention to the vast world of knowledge of plants and introducing them to the methodology of systematic academic enquiry.

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Course Specific Outcomes:

	The Course specific outcome includes:
	Understanding the nature and basic concepts of all the plant groups, their metabolism, components at the molecular level, biochemistry, taxonomy and ecology.
	The course will make them aware of natural resources and environment and the importance of conserving it.
	Hands on training in various fields will develop practical skills, handling equipment's and laboratory use along with collection and interpretation of biological materials and data.
	Knowledge gained through theoretical and lab based experiments will generate technical personnel in various priority areas such as genetics, cell and molecular biology, plant systematics and Cell Biology and biotechnology.

Out Come of B.Sc. Botany Course.

Diversity of Cryptogams	On completion of the course, students will be able to: • Know the salient features of Cryptogams plants. • Know the status of cryptogams as a group in plant kingdom. • Understand the life cycles of selected genera. • Understand the diversity among Bacteria, Viruses and Algae. • Know their morphology, systematics and biology. • Understand their life cycle patterns. • Understand the Structure of Fungi, Algae, Viruses Bacteria lichens. • Know the economic importance of fungi, lichens and plant pathogens.
Morphology of Angiosperm	On completion of the course, students will be able to: ➢ To understand the different Morphological Characters and their function. To know about Modification of different organ and their function and use. ➢ Understand the morphological diversity of vegetative and reproductive parts of flowering plants.
Histology Anatomy and Embryology	On completion of the course, students will be able to: • Understand the scope & importance of Anatomy. • Know various types of tissue systems. • Understand normal and anomalous secondary growth in plants. • Understand structure and development of plant reproductive organs • Understand microsporogenesis and megasporogenesisand development of male and female gametophytes. • Know the process of fertilization, endosperm and embryogenic.
Taxonomy Of Angiosperm	On completion of the course, students will be able to: • Understand the status of angiosperms in plant kingdom • Realize the origin of angiosperms • Study various systems of classification. • Understand various angiosperm families emphasizing their morphology, distinctive features and biology. • Know their economic importance.

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Plant Ecology	On completion of the course, students will be able to: • Understand plant communities and ecological adaptations in plants Learn about biodiversity and its conservation • Study botanical regions of India and different vegetation types. • Understand bioremediation, global warming and climate change.
Gymnosperms and Utilization of Plants.	On completion of the course, students will be able to: • Understand the status of Gymnosperm in plant kingdom • Realize the origin of Gymnosperm • Study various systems of classification. • Understand the role plants in human welfare. • Gain knowledge about various plants of economic use • Know importance of plants & plant products • Understand the chemical contents of the plant products • Know about the utility of plant resources
Plant Physiology	On completion of the course, students will be able to: • Understand the plants and plant cells in relation to water. • Understand the process of photosynthesis in higher plants • Understand the respiration in higher plants • Learn about the movement of sap and absorption, translocation of water and food. • Understand the plant movements.
Cell Biology and Molecular Biology, Genetics and Biotechnology.	On completion of the course, students will be able to: • Gain knowledge about "Cell Science". • Understand Cell wall,Cell membrane, organelles and cell division. • Learn the scope and importance of molecular biology. • Learn about different Epistasis ratio. • Understand the nature of biomolecules, their role in living systems. • Understand the process of central dogma. • Understand current status and future of biotechnology in India. • Gain knowledge of different instruments related to biotechnology. • Understand the importance of interdisciplinary and industrial approaches of Biotechnology.
Biodiversity of Angiosperm	On completion of the course, students will be able to: ➢ Gain Knowledge about the Angiosperm Biodiversity. ➢ Understand the types of biodiversity ➢ To understand the value of Biodiversity in India and of world. ➢ To know different policies about the conservation of endangered and endemic species. ➢ To know about in-situ and ex-situ conservation.
Laboratory and Field based experiments	On completion of the course, students will be able to: • Understand the morphological diversity ofdifferent plant forms. • Observe vegetative and reproductive parts of various plant forms. • Various plant products of economic use. • Acquire knowledge on chromosomes. • Know botanical source, characteristics and utilities of plant products. • Learn about the industrial applications of various plants and plant products. • Understand the floristic composition of different phyto-geographical regions.

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Department of Zoology

Course Outcome

Semester -I	F.Y.B.Sc.
Paper I	**Protozoa to Annelida**
	Upon completion of the course, the students will be able to:-
CO1	Identify animals by observation
CO2	Describe unique characters of Protozoa, Porifera, Coelenterate, Helminthes and Annelids
CO3	Explain life functions of Protozoa, Porifera, Coelenterate, Helminthes and Annelids
CO4	Describe ecological role of phylum Protozoa, Porifera, Coelenterata, Helminthes and Annelida
CO5	Identify diversity from Protozoa, Porifera, Coelenterate, Helminthes and Annelids
Paper- II	**Cell Biology**
	Upon completion of the course, the students will be able to:-
CO1	Describe in detail the structure of cell
CO2	Describe function and the composition of the plasma membrane
CO3	Explain principles of the cell theory
CO4	Differentiate between prokaryotes and eukaryotes
CO5	Understand importance of the nucleus and its components
CO6	Understand how the endoplasmic reticulum and Golgi apparatus interact with one another and know with which other organelles they are associated
CO7	Identify three primary components of the cell"s cytoskeleton and how they affect cell shape, function, and movement
Semester-II	
Paper-IV	**Arthropoda to Echinodermata and Hemichordata**
	Upon completion of the course, the students will be able to:-
CO1	Identify animals by observation
CO2	Describe unique characters of Arthropods, Mollusks, Echinoderms and Hemichordates
CO3	Explain life functions of Arthropods, Mollusks, Echinoderms and Hemichordates
CO4	Explain ecological role of phylum from Arthropoda to Hemichordata
CO5	Explain in detail diversity from Arthropods to Hemichordate

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Paper-V	**Genetics-I**
	Upon completion of the course, the students will be able to:-
CO1	Describe chemical basis of heredity
CO2	Explain role of genetics in evolution
CO3	Evaluate conclusions that are based on genetic data
CO4	Find the results of genetic experimentation in animals
Semester-III	
Paper-VII	**Vertebrate Zoology**
	Upon completion of the course, the students will be able to:-
CO1	Describe unique characters of urochordates, cephalochordates and fishes
CO2	Recognize life functions of urochordates to fishes
CO3	Explain ecological role of different groups of chordates
CO4	Explain the diversity of chordates and describe unique characters of amphibians, reptiles, aves and mammals
CO5	Describe life functions of amphibians, reptiles, aves and mammals
CO6	Explain ecological role of different classes of vertebrates
Paper-VIII	**Genetics-II**
	Upon completion of the course, the students will be able to:-
CO1	Explain in detail gene expression and its behaviour in transformation
CO2	Describe the role of genetics in evolution
CO3	Evaluate conclusions that are based on genetic data in population genetics
CO4	Describe genetic diseases and disorders
CO5	Explain the techniques that are used in genetic engineering
Semester-IV	
Paper-XI	**Animal Physiology**
	Upon completion of the course, the students will be able to:-
CO1	Describe in detail the physiology at cellular and system levels
CO2	Explain the role of different bio-molecules
CO3	Explain how mammalian body get nutrition from different bio-molecules
CO4	Describe the functions of different systems
CO5	Describe the physiology of respiratory, renal, endocrine and reproductive systems to define normal and abnormal functions
Paper-XII	**Biochemistry and Endocrinology**
	Upon completion of the course, the students will be able to:-

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CO1	Describe in detail the metabolism of carbohydrates, proteins, fats
CO2	Explain the fundamental biochemical principles
CO3	Describe basic laboratory techniques in biochemistry
CO4	Describe the structure and function of endocrine glands
CO5	Explain the role of hormones
Semester-V	
Paper-XV	**Ecology**
	Upon completion of the course, the students will be able to:-
CO1	Describe abiotic and biotic factors that affect, the distribution, dispersal, and behaviour of organisms
CO2	Identify factors that affect biological diversity and the functioning of ecological systems
CO3	Use an ecological vocabulary in arguments and explanations of ecological phenomena
CO4	Apply concepts and theories from biology to ecological examples
CO5	Analyse and interpret ecological information, research and data
Paper-XVI	**Fishery Science -I**
	Upon completion of the course, the students will be able to:-
CO1	Understands concepts of fisheries, fishing tools and site selection
CO2	Aqua culture systems, induced breeding techniques, post harvesting tecniques
CO3	Understanding of fishes habits and habitats and their functional anatomy
CO4	The students will be well equipped to become very competent in research or teaching fields
CO5	It is one of the small scale industry which can provide the student employment opportunity.
Semester-VI	
Paper-XIX	**Evolution**
	Upon completion of the course, the students will be able to:-
CO1	Describe evolutionary history of man
CO2	Describe origin of species on earth
CO3	Have an enhanced knowledge and appreciation of evolutionary biology and behavior
CO4	Perform, analyse and report on experiments and observations in whole organism biology
CO5	Gain information regarding animal classification and systematic, animal structure and function relationships, evolution between and within major animal groups, human evolution and animal reproduction and development
Paper-XX	**Fishery Science - II**

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	Upon completion of the course, the students will be able to:-
CO1	Provides knowledge of ornamental fish breeding which is highly professional and attractive avenue for youth.
CO2	Students gain knowledge in the areas of responses characterization and classification of Ostracoderms, placoderms, acanthodians, holocephali, elasmobranchs.
CO3	Students gain knowledge of integumentary system - basic structure of skin, dermal and epidermal pigments, fins, and scales.
CO4	Understanding of embryogenesis - Early development and post embryonic development

Department Of Mathematics

Programme Outcome

	Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
	A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
	Ability to analyse a problem, identify and define the computing requirements, which may be appropriate to its solution.
	Introduction to various courses like group theory, ring theory, field theory, vector spaces, number theory, mechanics, Ordinary differential equation.
	Enhancing students overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
	Ability to pursue advanced studies and research in pure and applied mathematical science.
	Programme Specific Outcome of B.Sc. Mathematics
	Think in a critical manner.
	Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
	Formulate and develop mathematical arguments in a logically.
	Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.

Course Outcome

Semester-I

Semester-I	**B.Sc. F.Y.**
Course Title	**MAT101 Differential Calculus**
	Student will be able to find derivative of hyperbolic and inverse hyperbolic function, logarithmic Differentiation, implicit functions.
	Student will be able to find successive differentiation, the *n th* derivative of

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	products of the powers of sines and cosines, Leibnitz's theorem.
	Understand importance of Rolle's Theorem, Lagrange's mean value theorem, Cauchy's mean value Theorem, Taylor's theorem, Maclaurin's.
	Introduce to function of two variable, partial derivatives, Euler's theorem on homogeneous function, total differentials.
Course Title	**MAT102 Differential Equations**
	Student will be able to solve first order differential equation utilizing
	The standard techniques for separable, exact, linear, homogeneous.
	Student will be able to find the complete solution of a nonhomogeneous differential equation as linear combination of the complementary function and a particular solution.
	Student will be able to find solution of simultaneous differential equations which are linear.
	Student will be able to derivation of a partial differential equation by elimination of constants, by elimination of arbitrary function.
Semester-II	**MAT201 Integral Calculus**
	Student will be able to solve integration of Algebraic Rational functions, Trigonometric function.
	Student understand rectification, length of plane curves, Volumes and Surfaces of revolution.
	Student will be able to find line integral, Surface integral, Volume integral.
	Student understands physical interpretation of Gauss theorem, reduction of surface to line integral condition for irrotational vector functional, Green's theorem.
Course Title	**MAT202 Geometry**
	Introduction to geometry of 2 dimensional.
	Study of plane 2 and 3 dimension.
	Finding equation in various forms of line, circle, ellipse, sphere, cones etc.
Semester-III	
Course Title	**MAT301 Number Theory**
	Find quotients and remainders from integer division.
	Understanding the definitions of congruence, residue classes and properties of congruence's, linear congruence.
	Student learn Fermat's factorization theorem, the little theorem, Wilson's theorem.
	Student learn the function Mobius inversion formula, Euler's phi-function, and some property of phi function.
Course Title	**MAT302 Integral Transforms**
	Student learn about Beta and Gamma function.
	Student will able to find Laplace transform, inverse Laplace transform.
	Student will have a working knowledge of basic application problem described by ordinary differential equation.
	Student learn about relationship between Fourier transform and Laplace transform, Finite Fourier sine transform, Finite Fourier cosine transform.
Course Title	**MAT303 Mechanics-I**
	Student learn about forces acting on particle.
	Student learn about equilibrium of forces acting on a particle.
	Student learn about forces acting on rigid body, centre of gravity.
Semester-IV	

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Course Title	MAT401 Numerical Methods
	To apply appropriate numerical method to solve the problem with most accuracy.
	Using appropriate numerical method determine approximate solution of ODE and system of linear equation.
	Compare different methods in numerical analysis w.r.t accuracy and efficiency of solution.
Course Title	**MAT402 Partial Differential Equations**
	Be familiar with the modeling assumptions and derivations that lead to PDEs.
	Recognize the major classification of PDEs and the qualitative differences between the classes of equations.
	Be competent in solving linear PDEs using classical solution methods.
Course Title	MAT403 Mechanics-II
	Student learn about kinematics and dynamics of a particle in two dimensions.
	Student learns about kinetics of particles.
	Student learn about motion of a projectile and motion in resisting medium, central orbits.
Semester -V	B.Sc. T.Y.
Course Title	MAT501 Analysis-I
	Describe fundamental properties of the real numbers that lead to the formal development of real analysis.
	Comprehend rigorous arguments developing the theory underpinning real analysis.
	Demonstrate an understanding of limits and how they are used in sequence, series, construct rigorous mathematical proofs of basic results in real analysis.
Course Title	MAT502 Abstract Algebra-I
	Understands the importance of algebraic properties with regard to working within various number systems.
	Extend group structure to finite permutation groups. Symmetry using group theory.
	Generate groups give specific condition.
	Student will be able to define ring and subrings.
	Study of ideals and concept related to ideal, various integral domain in ring.
Course Title	MAT503 Mathematical Statistics-I
	Student understands frequency distribution and measures of central tendency.
	Student will be able to measures of dispersion skewness and kurtosis.
	Students learn about random variable and distribution function.
Course Title	MAT504 Ordinary Differential Equation-I
	Student learn about problems associated with differential equation.
	Student learn about general linear equation of the first order.
	Student understands formula for wronskian, able to solve non-homogenous equation.
Course Title	**MAT505 Programming in C-I**
	Student learn about constants, variables and data types.
	Student learn about operators and expression.
	Student learn about managing input and output operators.
Semester-VI	
Course Title	**MAT601 Real Analysis - II**
	Student understands limits in metric spaces, continuous on metric spaces, open sets, closed sets.

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	Student learn about complete metric space, compact metric space, and uniform continuity.
	Student will able to solve Riemann integral, set of measure zero.
Course Title	**MAT602 Abstract Algebra -II**
	Student learn about bases.
	Student learn about Dual spaces.
	Student learn about inner product spaces, Modules.
Course Title	**MAT603 Mathematical Statistics - II**
	Student learn about mathematical expectation, generating function.
	Student learn about discrete probability distributions.
	Students learn about correlation and regression.
Course Title	**MAT604 Ordinary Differential equation-II**
	Students learn about wronskian and linear independence.
	Student will able to solve nonhomogeneous equation, homogenous equation with analytic coefficient, Legendre equation.
	Students will able to solve linear equation with regular singular points.
Course Title	**MAT605 Programming in C-II**
	Student learn about decision making and branching.
	Student learn about decision making and lopping.
	Student learn about arrays.

Department of Microbiology

	Microbiology is a very large discipline with many different specialties; it has a great impact on medicine, agricultural and food sciences, ecology, genetics, biochemistry, and other fields.
	Microbiology has both basic and applied aspects in fields such as microbial cytology, microbial physiology, microbial ecology, microbial genetics, molecular biology, microbial taxonomy etc.
	Microbiologists play an important role in fields such medical microbiology, Immunology, Public health microbiology, food & dairy microbiology, Agricultural microbiology & Industrial microbiology.
	Programme helps to gain the basic knowledge of the field medical science, ecology, agriculture, or biotechnology.
	Career opportunities in B.Sc. microbiology course program of our university is appropriate to train students to pursue careers in the following areas.
	Quality assurance technologist in industries like Food and Dairy, Agro based biotechnology industries, Distilleries and Beverages and Pharmaceutical
	Clinical or veterinary microbiologist

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	Supervisors or laboratory managers
	Environmental Microbiologist in Pollution control board, Water and Land Management, Public health department,
	Pathology, Mushroom cultivation, Plant tissue culture, Fermented food products, Small scale units, Consultants.
Paper-I	**Fundamentals of Microbiology**
	To familiarize the student with those concepts that is basic to viruses and prokaryotic cells.
	To understand the concepts of microbiology.
	To study the molecular and structural unity of microbial life.
Paper-II	**Microbiological techniques and general microbiology**
	To understand the techniques of isolation of microorganisms.
	To understand the significance of pure culture.
	To study the methods of cultivating and preserving microbial cultures.
	To understand and use methods of visualizing microorganisms and practical aspects of sterilizing techniques.
Paper-V	**Cytology and General Microbiology**
	To identify and describe the parts of a bacterial cell and state the function of each bacterial cell structure.
	To describe the types of nutrients that is used by microorganisms for growth and metabolism.
Paper-VI	**Basic Biochemistry**
	To understand the basic concepts of biochemistry.
	To study in detail carbohydrates, lipids, proteins, nucleic acids, pH and buffers.
Paper-VII	**Environmental microbiology**
	To understand the significance of air pollution, air sanitation, air as carrier of microorganism and significance of air flora in human health, hospitals and industries.
	To know the methods of determination of sanitary quality of water.
	To understand the importance of indicators of fecal pollution and ways to

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	sanitize potable water.
	To study the sewage treatment and disposal.
Paper-VIII	**Immunology**
	To study the significance of normal flora, the normal defensive mechanism of host, virulence factors of microorganisms and process of infection.
	To understand the various types of immunity and their mechanism, general methods of prophylaxis.
	To grasp the immunological concepts with reference to antigens, antibody and antigen- antibody reaction.
Paper-XI	**Applied Microbiology**
	To understand the composition of milk, sources of microorganisms in milk, desirable and undesirable changes brought by microorganisms in milk, diseases spread by milk, microbiological examination of milk.
	To study the sterilization and pasteurization techniques of milk.
	To know the important groups of microorganisms in food, principles of food preservation, microbial spoilage of canned and non- canned foods, Food borne diseases and intoxication, Fermented foods and Probiotics.
Paper-XII	**Clinical Microbiology**
	To understand etiology, pathogenesis laboratory diagnosis, epidemiology, prophylaxis and chemotherapy of few human diseases caused by bacteria, viruses, fungus and protozoa.
	To study the diseases including tuberculosis, syphilis, malaria, typhus fever, candidiasis, typhoid, and cholera, infection by *Staphylococcus aureus*, *Streptococcus pneumoniae*, HIV, Hepatitis virus, and oncogenic viruses.
Paper-XV	**Microbial Genetics**
	To understand and apply the principles and techniques of molecular biology which prepares students for further education and employment in teaching, basic research, or the health professions.
	To display a broad understanding of core molecular genetics concepts including molecular biology, genetics, cell biology, physiology.
Paper-XVI	**Microbial Metabolism**
	To understand the basic concepts of metabolism and free energy.
	To introduce the various types of energy yielding metabolism, comparative

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	account of fermentation, respiration and photosynthesis.
	To make students aware of the various pathways of carbohydrate fermentation.
	To familiarize with basic concept of Enzyme action, classification of enzymes and enzyme inhibition.
	To understand aspects of aerobic respiration, biosynthesis of nucleotides and catabolism of unsaturated fatty acids and nucleic acids.
Paper-XIX	**Recombinant DNA technology**
	To understand core molecular genetics concepts including molecular biology, genetics, cell biology, physiology.
	To demonstrate working knowledge in a defined skill set of molecular biology and biotechnology protocols including PCR, Plasmid isolation, gene isolation and cloning, DNA sequencing.
Paper-XX	**Industrial Microbiology**
	To understand microorganisms used to make valuable products such as antibiotics, vaccines, steroids, alcohols and other solvents, vitamins, amino acids and enzymes.
	To study historical events in industrial microbiology, design of a fermentor, IP and W.H.O. standards of sterility.
	To familiarize with screening methods, preservation of industrial strain, strain improvement methods, inoculum and fermentation medium development.
	To understand typical fermentations like Penicillin, vitamin B12, L-Lysine, ethyl alcohol, citric acid, Amylase, baker's yeast.

PRINCIPAL
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M.A. English

Programme Outcomes:

PO1 – To acquaint the learners' community with the development of New Literatures in English.

PO2 - To acquaint the learners with the social, political and literary history of the period.

PO3 – To acquaint the students with culture, thought, literary trends and movements of the period through the prescribed texts.

PO4 – To develop the critical thinking, scientific Temper, Ethics, Gender Sensitization, Social Commitment and effective communication.

PO5 – Demonstrate empathetic social concern and engage in service learning and community engagement programmes for contributing towards achieving of local, regional and national goals.

Specific Outcomes:

POS1 – To familiarize with the writers of English literature across different ages and continents, their theories, perspectives, models and methods.

POS2 – To enhance literary and critical thinking.

POS3 – To be able to demonstrate competence in analysis and critically analyses scholarly work in the areas of English language teaching, literary research.

POS4 – To sharpen the intellectual sensibility of the student with the confrontation of the multifaceted critical and intellectual positions of the theoreticians.

POS5 – To equip the students to enable and empower them to understand the Literature of the oppressed.

POS6 – Students be exposed to literature and science as well as science fiction.

POS7 – To introduce the students with the classics of various Literatures and World Classics.

POS8 – To familiarize the students with various trends and movements in fiction.

POS9 – To able to analyze linguistic meaning and pragmatic meaning.

POS10 – To develop a sensibility among the learners to understand the role of film and literature in the contemporary conditions.

POS11 – To train the students in stylistics as an interdiscipline for understanding the world both receptively and instructively.

POS12 – To develop the creative writing in English and the critical understanding of Comparative Literature, understanding of Women Writing, linguistic competence.

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Department of Botany

Outcome of Programme M.Sc. Botany.

- Describe the evolution, anatomy, morphology, systematic, genetics, physiology and ecology and pathological studies of plants.
- The ecological and evolutionary features of the flora and fauna in environment.
- Knowledge about identify and analyze scientific problems and environmental issues using oral and written communication skills.
- Knowledge about the continually developing and is dynamic; students can find new scientific information and compare it with existing information.
- Describe how all scientific knowledge is continually developing and is dynamic.
- Students can find new information and compare it with existing information.
- Students have understood the scope and significance of the program.
- Students have developed the scientific temperament after completion of the program.
- Students have developed the skills to identify different types of plants.
- Students have developed the skills to do laboratory work from different equipments.
- Students have developed the skills related to scientific research in the area of Botany.
- Students are ready to transform the society and can explain the importance of different plants to human beings.

Specific outcome of Course.

Course Outcome. (M.Sc. I)

1. BOT 401 Cell and Molecular Biology.

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

- The cell structures in relation to function of cells the fundamental unit of life, are concerned in this course along with molecules present in cells.
- Apply the principles of cell biology in designing experiment, statistical analysis, and interpretation of results.
- Operate and solve exercise using computation statistics software.

- Get acquitted with basic approach in the research methodology.
- Isolation of plant DNA
- Isolation of plant RNA
- Estimation of Seed protein.
- Acquaint with concepts in prokaryotic, eukaryotic, and viral genetics
- Explain central dogma of molecular biology (replication, transcription, and translation)
- Enlist and explain types of mutation, gene regulation and transposable element
- Conversant with Laboratory Techniques *viz.* Microscopy, SEM & TEM, Ultracentrifugation, fractionation, Electrophoresis, PCR, GISH, FISH and Immunochemical techniques. The flow cytometry and confocal microscopy in karyotype analysis.

BOT 402 Plant Biotechnology.

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

- Know about Equipment's required in Tissue culture Lab
- Explant Culture.- Anther culture Pollen culture, Micropropagation. Embryo rescue technique.
- Somaclonal variation. *In vitro* mutation. Isolation of plant protoplasts and viability testing.
- Protoplast fusion techniques.
- Tissue culture of important Horticultural, medicinal plants
- Media preparation techniques for different plants.
- Sterilization techniques for media as well as for explants

BOT 403 Biology and Diversity of Algae and Bryophytes.

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

- To know about morphological, anatomical and developmental patterns in the bryophytes and algae
- To know about Algae and Bryophytes
- To know about the reproductive parts their development and mechanism of reproduction and life cycle pattern.

BOT 404 Taxonomy of Angiosperm.

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

- Study plant morphology
- Description of a plant specimen.
- Study of at least 20 locally available families of flowering plants.
- Identification of genus and species of locally available wild plants.
- Preparation of botanical keys at generic level by locating key characters.
- Knowledge of at least 10 medicinal plant species.
- Knowledge of secondary metabolites and its use in taxonomy.

IC001 Indian Constitution.

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

- Students understanding the values of Constitution.
- Students know about Indian Constitution and their importance to us and Society to develop powerful democracy and it makes powerful nation.

M.Sc. I year II Sem

BOT 406 Cytology and Genetics.

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

- Know about the induction of polyploidy in plants using colchicine, methods of application of colchicine.
- Isolation of biochemical mutants following physical and chemical mutagenic
- Isolation of chlorophyll mutants following physical and chemical mutagenic treatments.
- Isolation of morphological mutants following physical and chemical mutagenic treatments.
- Karyotype analysis, Meiosis of complex translocation heterozygotes.
- Meiotic behavior of monosomy, trisomy in plants and its effect.
- Chromosomal behavior in mutagen treated plants.
- Chromatin organization, Structural and Numerical alterations in chromosomes

BOT 407 Plant development and Reproduction.

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

- Know about plants anatomical structure, their developmental patterns.
- Plant reproductive parts development of male, female gametophytes and fruits.
- Vascular tissues and its constituents by sections and maceration, wood anatomy, TS, TLS and RLS
- Mechanical tissues (Collenchyma, Sclerenchyma, Stone cells and Xylem) , Secretary tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands), laticifers (Latex cells and Vessels).
- Normal and abnormal secondary growth etc.

BOT 408 Biology and diversity of fungi and microbes.

- Comprehend the diversity of lower cryptogams (Fungi, Bacteria, Phytoplasma and viruses. Collection and study of fungi, bacteria from different localities, Identification up to generic level.
- Recognize the morphology, anatomy , physiology, reproduction and lifecycle pattern.
- Their diversification and familiarize with various ecological niche.
- Positive and negative values.

BOT 409 Plant Physiology and Metabolism

- After completion of the course the students are familiar with various physiological aspects involved in the plant development.
- Also the role of enzymes in it and mechanism of photosynthesis, respiration, nitrogen and lipid metabolism.
- The students are able to isolate starch, pectine and various nutritive products from the plants.
- Qualitative and quantification of the plant contents and its biochemistry and mode /mechanism of synthesis etc.

M.SC. II Year III Sem

BOT 501 Biology and diversity of Pteridophytes and Gymnosperm

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

- To know about morphological, anatomical and developmental patterns in the Pteridophytes and gymnosperms.
- To know about the reproductive parts their development and mechanism of reproduction and life cycle pattern.
- Thallus and wood anatomy, Mechanical tissues (Collenchyma, Sclerenchyma, Stone cells and Xylem) , Secretary tissues (Mucilage Canals, Resin canals, Nectaries, and oil glands), laticifers (Latex cells and Vessels).
- Economic values of the lower plants.

BOT 502 Plant Ecology and Conservation.

- On completion of this course the students are able to analyze various types of ecosystems, correlate different ecosystems.
- To analyze the threat and suggest conservative measures.
- The students are also trained in the environmental impact analysis
- Students are able to analyze, monitor various physical, chemical and biological properties of soil water and air.

BOT 521 B and 522 A Plant Pathology

- Students will know about concept of diseases, knowledge and awareness of diseases, causal agents of plant diseases, identification methods and management of crop diseases.
- Students can able to understand and identify the casual organism.
- Students develop the control measure methods to avoid the losses.

M.Sc. II year IV sem.

BOT 503 BIO-PROSPECTING AND PLANT RESOURCE UTILIZATION.

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

- Understand core concepts of Economic Botany and relate with environment, populations, communities, and ecosystems
- Develop critical understanding on the evolution of concept of organization of apex new crops/varieties, importance of germplasm diversity, issues related to access and ownership.
- Develop a basic knowledge of taxonomic diversity and important families of useful plants.
- Understand the common cultivation methods of microalgae including photobioreactors and open ponds, Seaweed bioresources etc.
- Appreciate the diversity of plants and the plant products in human use.
- Understand the concept of IPR, various legal issues related to IPR.
- Exploring the potential of Marine bioresources, Microbial , medicinal plants etc.
- Varoius phytochemical techniques, industrial process, pharmacognostic procedures, authentication of specimens, Preservation of plants and plants products

BOT 504 GENETIC ENGINEERING AND BIOINFORMATICS.

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

- To use genetic engineering tools in crop improvement
- Use the Bioinformatics toll in Biological data analysis.
- Able to explain the methods used for characterizing and managing Biological data.
- Classify different types of Biological Databases.

BOT 522 B PLANT PATHOLOGY III

- Students will know about concept of diseases, knowledge and awareness of diseases, causal agents of plant diseases, identification methods and management of crop diseases.
- Students can able to understand and identify the casual organism.
- Students develop the control measure methods to avoid the losses.

BOT 524 B RESEARCH COMPONENT- PROJECT WORK.

- To developing research discipline
- To develop the research methods
- To overcome the research problem.
- To know about new technics and skills.

M.Sc. Chemistry(Organic)

Programme outcome

After completing M.Sc. Chemistry programme, students will be able to

1. Students will understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life. They will also be able to acquire knowledge about the fundamentals and applications of chemical and scientific theories.

2. Students will find that every branch of science and technology is related to Chemistry. They will develop scientific outlook not only with respect to science subjects but also in all aspects related to life.

3. Students will become familiar with the different branches of chemistry like analytical, organic, inorganic, physical, environmental, polymer and biochemistry. They will also learn to apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and in industries.

4. The student will acquire knowledge of Chemical Thermodynamics, Kinetics, Electrochemistry, Atomic Structure, Organic Chemistry, Spectroscopy and Skill in Industrial Chemistry.

5. Students will gain a thorough Knowledge in the subject to be able to work in projects at different research as well as academic institutions. Enhance the scientific temper among the students so as to develop a research culture and implementation of the policies to tackle the burning issues at global and local level.

6. Demonstrate and apply the fundamental knowledge of the basic principles in various fields of Chemistry.

7. Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to Environmental pollution.

8. Apply knowledge to build up small scale industry for developing endogenous product.

9. Apply various aspects of chemistry in natural products isolations, pharmaceuticals, dyes, textiles, polymers, petroleum products, forensic etc. and also to develop interdisciplinary approach of the subject.

10. Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to Environmental pollution. Apply the knowledge to develop the sustainable and eco-friendly technology in Industrial Chemistry. Augment the recent developments in the field of green and eco-friendly reactions.

M.Sc. Chemistry(Organic)

Course outcome

Semester I

101 Analytical Chemistry

Students will be Understand basic concept of analytical chemistry. Students will be Understand different separation and extraction technics. Understand different chromatographic technics and will be able to prepare TLC.

102 Inorganic Chemistry

Students will be Understand group theory in inorganic chemistry and symmetry concept. Understand reaction mechanism of transition metal complexes. Understand roll of inorganic chemistry in biological system.

103 Organic Chemistry

Students will be understand chemical bonding and reactivity, various effects in organic molecules. Students will be understand Acidity and Basicity as well as aromaticity. Students will be understand concepts of stereochemistry and will be able to stereochemical aspects in organic chemistry.develop knowledge of substitution (electrophilic, nucleophilic), addition and elimination reactions.

104 Physical Chemistry

Represent of the rate law of the elementary and chain reaction. Understand of the theories for the determination of the rate of the reactions. Understand of the kinetics of the explosive photochemical and unimolecular reactions. Understand of the laws of thermodynamics and their applications. know the phase diagram of single component systems and binary mixtures. Understand of the applications statistical thermodynamics.

Semester II

205 Spectroscopic methods of analysis

Students will be Understand different spectroscopic technics (Microwave spectroscopy, Vibrational and Raman spectroscopy, UV-Visible spectroscopy, IR spectroscopy and NMR spectroscopy) and Students will be able to solve problem based on UV, IR and NMR.

206 INORGANIC CHEMISTRY

Students will be able to analyse the relation between oxidation state of metals and their biological behaviour. Students will be able to understand the role of metals and chemicals in biological systems. Students will learn the use of porphyrins of different metal ions in biological systems. Students will be able to make a correlation between enzymatic functions and metals.

207 Organic Chemistry

Students will be understand various reactions and rearrangements and will be write mechanism of reactions and their applications. Students will be understand how to convert

one molecule into another by using oxidising and reducing, reagents. Students will be applying theoretical knowledge in practicals for various conversions.

208 Physical Chemistry

Students will be understand quantum chemistry, learn different rules and equations and able to solve numerical on it. Students will be understood phase rule and its different concepts. Students will be able to understand crystallography and photochemistry.

209, 210, 211 and 212 Laboratory Course

know meaning of safety signs on container of chemicals, safety in handling of chemicals, understand detailed explanation of at least four different types of substances (e.g. nitric acid, benzene, potassium dichromate, bromine, etc.), know handling of glasswares and care to be taken, handling of organic flammable as well as toxic solvents in laboratory, know use of safety goggles, shoes and gloves, fire extinguisher and its use and action to be taken in accidental cases.

understand different purification techniques in organic chemistry like recrystallization, distillation, steam distillation and extraction.understand how to carry out different types of reactions and their workup methods, become aware of green chemistry and role of green chemistry in pollution reduction.

Prepare the exact solutions for quantitative analysis. Apply the knowledge of quantitative analysis for the determination of metals from ores/alloys. synthesize Inorganic complexes and also find their purity. Understand Ion-exchange chromatography for separation of metal ions. Understand the principle and working of different instruments like colourimeter, conductometer, spectrophotometer, etc

Prepare the solution of the desired concentration and the desired volume, Know the principle and handling of pH meter, Potentiometer, conductivitymeter, colorimeter, viscometer,etc. Plot accurate graphs of the desired scale for the calculations.Maintain laboratory ethics, safety and cleanliness. Understand waste management of the laboratory

Semester III

313 Structural elucidation by spectral method

Students will be understood ^{1}H-NMR, ^{13}C-NMR and Mass Spectroscopy and will be able solve problems on it. Students will be understand Mossbauer spectroscopy and ESR Spectroscopy.

314 ORGANIC SYNTHESIS

Students will be able to analyse the difference in the basic types of synthetic approaches. Students will be able to understand the role of reagents and catalysts in organic synthesis. Students will be able to make a correlation between supramolecular and normal organic synthesis.

315 Asymmetric Synthesis and bio-organic chemistry

Students will be understand various ways of attack on electrophilic species by a nucleophile, to predict enantioselective product. understand mechanisms in asymmetric reaction, develop interest in Asymmetric synthesis of naturally occurring essential compounds. Students will be

learn basic concept of bio-organic chemistry. Students will be learn enzyme chemistry, co-enzyme chemistry, super molecular chemistry and different enzyme models.

316 PHOTOCHEMISTRY AND PERICYCLIC REACTIONS

Students will learn the basic diiference between photochemical and thermal reactions. Based on the different principles of photochemistry, they will be able to solve different pratical problems. Further some well-known named reactions in this field will add on to the knowledge of the students.

Semester IV

417 Photochemistry, free radicals and Pericyclic reactions

understand various Pericyclic, free radical and photochemical reactions and rearrangements and will be able to write mechanism of reactions and their applications.

418 Advanced Organic and Heterocyclic Chemistry.

Industrial applications of organometallic compounds in organic reactions.Mechanisms of organometallic reactions.Stereochemistry of the organometallic reactions.understand how to synthesize five, six and seven-membered heterocycles. utilize their knowledge in practicals for various heterocyclic and photochemical conversions.

419 NATURAL PRODUCTS

Students will able to Recognize and draw particular carbohydrate structures, general of cyclic monosaccharides and disaccharides, and their implications for structure/function. ¬ Students will able to predict the products of condensation reactions and hydrolysis. ¬ Students will capable of determining the Sequence of amino acids

420 Medicinal Chemistry

understand the synthesis of various drugs. understand the mode of action of different anti-fungal, anti-bacterial and anti-viral drugs.

421,422,423 and 424 Organic Chemistry Laboratory Course

Student will be able learn practically How to synthesize organic molecules. How to maintain reaction conditions.Arrangement of assembly.How to follow reaction by using thin layer chromatography Methods of purification of samples. How to make multistep organic reaction and Student will be able to prepare project and its dissertation..