

## UNDER GRADUATE COURSE OUTCOMES

## BCA

Program	Course	Course Outcomes
BCA I Year	<b>Computer Fundamentals, Organization and Architecture</b>	Understand the basic structure, operation and characteristics of digital computer.
		Design simple combinational digital circuits based on given parameters.
		Understand the working of arithmetic and logic unit.
		Know about hierarchical memory system including cache memories and virtual memory.
	<b>Fundamental of Computer</b>	Know the contributions of Indian in the field of computer architecture and related technologies.
		It includes the basic and preliminary concepts of computers. It discusses about the various units and components of Computer
		The course also comprises basics of computer hardware and software including the
		This is the basic step for develop an understanding about computer system.
	<b>Operating System</b>	Describe the importance of computer system resources and the role of Operating System in their management policies and algorithm.
		Specify objectiev of modern operating system and describe how operating system have involve over time.
		Describe the concept of multithreading and memory management techniques.
		Describe various file operations. file allocation methods and disk space management.
	<b>Elective: Computational Mathematics</b>	Implement trigonometric solutions for measurements in real world scenarios.
		Implement matrices and simultaneous equation to solve complex problems.
		Use statistical tools efficiently.
		Use mathematical logic and predicate calculus for solving problems.
	<b>Elective: Discrete Mathematics</b>	Apply the concepts of set theory for finding solutions to set related problems.
		Apply the boolean algebra, switchingcircuits and their applications.
		Minimize the Boolean Function using Karnaugh Map.
		Understand the lattices and their types.
	<b>Elective: Numerical Methods</b>	Graphs, their types and its applications in study of shortest path algorithms.
		Test whether two given graphs are isomorphic.
		Understand the Eulerian and Hamiltonian graphs.
Represent graphs using adjacency and incidence matrices.		
<b>Elective: Probability and Statistics</b>	Understand the discrete numeric functions, generating functions and Recurrence Relations.	
	Understand numerical methods to find the solution of a system of linear equations.	
	Compute interplation value for real data.	
	Find quadrature by using various numerical methods.	
<b>Elective: Probability and Statistics</b>	Solve system of linear equations by using various numerical techniques.	
	Obtain solutions of ordinary differential equations by using numerical methods.	
	Describe and calculate the mean deviation, standard deviation, range, quriles and percentiles.	
	Understand and Use the terminology of probability.	
	Determine whether two events are mutually exclusive and independent.	
	Calculate Probabilities using the addition and multiplication rules.	
	Recognize and understand discrete and continuous proability distribution functions, binomial, uniform and exponential	
	Calculate and interpret the correlation coefficient.	
Understand the basic concepts of linear regression and correlation.		
BCA II Year	<b>Data Communication and Computer Network</b>	Interpret the student"s t probability distribution, chi-square goodness-of-fit, F and Z test.
		<ul style="list-style-type: none"> <li>• Demonstrate the Basic Concepts of Networking, Networking Principles, Routing Algorithms, IP Addressing and Working of Networking Devices.</li> <li>• Demonstrate the Significance, Purpose and application of Networking Protocols and Standards.</li> <li>• Describe, compare and contrast LAN, WAN, MAN, Intranet, Internet, AM, FM, PM and Various Switching Techniques.</li> <li>• Explain the working of Layers and apply the various protocols of OSI &amp; TCP/IP model.</li> <li>• Analyze the Requirements for a Given Organizational Structure and Select the Most appropriate Networking Architecture and Technologies.</li> <li>• Design the Network Diagram and Solve the Networking Problems of the Organizations with Consideration of Human and</li> </ul>
		<ul style="list-style-type: none"> <li>• Explain the features of database management systems and relational database.</li> <li>• Design conceptual models of a database using ER modelling for real life applications and construct queries in relational algebra.</li> <li>• Create and populate a RDBMS for a real-life application, with constraints and keys, using SQL.</li> <li>• Retrieve any type of information from a database by formulating complex queries in SQL.</li> <li>• Analyse the existing design of a database schema and apply concepts of normalization to design an optimal database</li> </ul>
	<b>Database Management SystemsUsing PL/SQL</b>	
	<b>Internet Applications using Java Programming</b>	<ul style="list-style-type: none"> <li>• Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.</li> <li>• Read and make elementary modifications to Java programs that solve real-world problems.</li> <li>• Validate input in a Java program.</li> <li>• Design and use basic applet for web page</li> </ul>

	<b>Internet of Things</b>	<ul style="list-style-type: none"> <li>To understand the basics of Internet of Things</li> <li>To get an idea of some of the application areas where Internet of Things can be applied</li> <li>To understand the middleware for Internet of Things and the concepts of Web of Things</li> <li>To understand the concepts of Cloud of Things with emphasis on Mobile cloud computing</li> <li>To understand the IOT protocols</li> </ul>
<b>BCA III Year</b>	<b>Computer Network,Internet Technology &amp; Security</b>	Identify information security goals, classical encryption techniques.
		Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality
		demonstrate expertise in configuring host and network level technical security controls, to include host firewalls, user access
	<b>Core Java</b>	To inculcate knowledge on Java Programming concepts
		Knowledge of creating java applications programs that solve simple business problem
		Knowledge of compile and execute java programs using class, object, constructors, destructors, inheritance, etc.
	<b>MIS</b>	The course develop an understanding in students for the importance of Information Systems in management
		It discusses various Information System solutions like ERP, CRM, Data warehouses and the successful implementation of define an information system from both a technical and business perspective and distinguish between computer literacy and
	<b>Python Programming</b>	To understand why Python is a useful scripting language for developers.
		To learn how to use exception handling in Python applications for error handling.
To develop the skill of designing Graphical user Interfaces in Python		
<b>E-Governance</b>	understand the concept of e-government, and the associated benefits and drawbacks	
	understand the basic principles of biometric identification and verification systems	
	understand how a relational database differs from a flat database, including the function and construction of a joining table	
<b>Principles and Practices of Management</b>	Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.	
	Evaluate the global context for taking managerial actions of planning, organizing and controlling.	
	Assess managerial practices and choices relative to ethical principles and standards.	
<b>B.Sc. (Computer Science)</b>		
<b>B.Sc (CS) - 1st Year</b>	<b>Computer System Architecture</b>	Understand the basic structure,operation and characteristics of digital computers
		Be able to design simple combinational digital circuits based on given parameters.
		Familiarity with working of arithmetic and logic unit as well as the concept of pipelining.
		Know about Heirarchiechal memory system including cache memories and virtual memory
		Understand the cocept and advantages of Parallelism,Threading,multiprocessors and multicore processor
	<b>Programming methodologies &amp; Data Structure</b>	Know the contributions of Indians in the field of computer architecture and related technologies.
		Develop simple algorithms and flow charts to solve a problem with programming using top down design principles
		Writing efficient and well structured and computer programs
		Learn to formulate iterative solutions and array and array processings algo for programs
		Use recursive techniques.pointers and searching methods in programming
Will be familiar with fundamental data structure,their implementation;become accustomed to the description of algorithms in both functional and procedural style		
Have knowlrdge of complexity of basic operations like insert,delete and search on these data structures		
Posses ability to choose a data structures to suitably model any data used in computer application		
Design programs using various data structures including Hash tables,Binary and general search tree,heaps and graphs		
Asses efficiency tradeoffs among different data structure implementations.		
<b>Elective: Data Analysis &amp; Visualization through spreadsheet</b>	Implement and know the applications of algorithms for searching and sorting etc.	
	Prepare a spreadsheet file and enter data into the sheet.	
	Illustrate formatting and editing capabilities on the data.	
	Demonstrate basic calculations and save data.	
	Import and export data into the spreadsheet.	
<b>Elective: Data Analysis &amp; Visualization Lab</b>	Demonstrate basic visualizing, analyzing, organizing and sharing techniques.	
	Prepare a spreadsheet file and enter data into the sheet.	
	Illustrate formatting and editing capabilities on the data.	
	Demonstrate basic calculations and save data.	
	Import and export data into the spreadsheet.	
<b>Elective: M.S. Office</b>	Demonstrate basic visualizing, analyzing, organizing and sharing techniques.	
	To create and manage professional documents using word.	
	Analyze, manage and present data using excel.	
	Create and manage presentation using powerpoint.	
	To insert a table, picture, or drawing into the document.	
<b>Elective: M.S. Office (Practical)</b>	To prepare the document to be sent as a circular letter.	
	To use keyboard shortcuts to perform tasks.	
	To create new document, open, save and print a document.	
	To edit and format text, change the page layout, background and borders.	
	To modify power point custom template presentation.	
	To insert clip art and pictures to documents.	
	To navigate the start menu to locate programs, files, and settings & create files and folders.	
To create a word document with customized template.		
<b>BSc (CS)- II Year</b>	<b>Computer Networks &amp; Information Security</b>	Define and describe the components of Data Communications System such as various protocols, OSI Model, data transmission in analog and digital format.
		Identify and differentiate among the network devices and drivers
		Learn and describe various error detection and correction methods.
		Describe the various protocols and can identify the application areas of each protocol.
	<b>Object Oriented Programming with Java</b>	Identify classes, objects, members of a class and the relationships among them needed for a finding the solution a specific problem.

		<p>Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.</p> <p>Demonstrate understanding and use of different exception handling mechanisms and concepts of multi-threading for robust faster and efficient application development</p> <p>Identify and describe common abstract user interface components to design GUI in Java using Applet &amp; AWT along with response to events.</p>
B.Sc.(CS) - III Year	Data Base Management System	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network
		Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
	Operating System Concepts	Explain various memory management techniques and concept of thrashing
		Recognize file system interface, protection and security mechanisms.
		Explain the various features of distributed OS like Unix, Linux, windows etc.
	Physics-Quantum Mechanics And Applications Quantum Mechanics	This course will enable the student to get familiar with quantum mechanics formulation.
		After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation.
		The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student
		Through understanding the behavior of quantum particle encountering a i) barrier, ii)potential, the student gets exposed to solving non-relativistic hydrogen atom
	Physics-Solid State Physics	Study of influence of electric and magnetic fields on atoms will help in understanding Stark effect and Zeeman Effect
		At the end of the course the student is expected to learn and assimilate the following
		A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by Crystallin materials
		Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.
		At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.
		Secured an understanding about the dielectric and ferroelectric properties of materials.
	Maths-Linear Algebra and Numerical Analysis	Understand above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.
Understand the basic idea about superconductors and their classifications.		
Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.		
Maths-Real Analysis	Represent mathematical information and communicate mathematical reasoning symbolically and verbally.	
	Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning	
	describe the fundamental properties of the real numbers that underpin the formal development of real analysis	
Maths-Discrete Mathematics	demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration	
	demonstrate skills in constructing rigorous mathematical arguments	
	demonstrate skills in communicating mathematics.	
<b>B.Sc. (Information Technology)</b>		
B.Sc (IT) - I Year	Problem Solving and Python Programming	Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in
		Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving.
		Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms.
		Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples
		Write simple Python Programs using common data structure
	Use Files for Data Input and Output	
	Introduction to IT & ICT Tools	Make use of sequences and standard libraries in programming
Apply object oriented programming concepts in problem solving		
Gain Knowledge of Python frameworks for web development		
BSc (IT) - II Year	Web Application Development	Describe the various formats to represent different types of data.
		Explain basic computer organization and its peripherals.
		Make uses of word Processor,Spread sheet,Slide presentation S/W for effective information Usage
	Database Management Systems	Define various cutting edge Technologies used in managing Information
		Describe the fundamentals of web designing. use rich Internet application technologies
		Design and develop standard and interactive web pages using Java-scripting and PHP-language.
B.Sc.(IT) - III Year	DBMS and RDBMS using Oracle	Acquire knowledge and skills for creation of website considering both client and server-side programming.
		Explain the features of database management systems and relational database.
	Information Technology Trends	Retrieve any type of information from a database by formulating complex queries in SQL.
Analyse the existing design of a database schema and apply concepts of normalization to design an optimal Database		
		create and populate a RDBMS for a real-life application, with constraints and keys, using SQL.
		Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network
		Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
		Describe the importance of IT enabled services and challenges.
		Recognize enterprise IT architecture for Information technology.

		Illustrate various IT web services for betterment of knowledge.	
	<b>Physics-Quantum Mechanics And Applications Quantum Mechanics</b>	This course will enable the student to get familiar with quantum mechanics formulation. After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation. The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student Through understanding the behavior of quantum particle encountering a i) barrier, ii)potential, the student gets exposed to solving non-relativistic hydrogen atom Study of influence of electric and magnetic fields on atoms will help in understanding Stark effect and Zeeman Effect respectively	
	<b>Physics-Solid State Physics</b>	At the end of the course the student is expected to learn and assimilate the following A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by Crystallin materials Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids. At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss. Secured an understanding about the dielectric and ferroelectric properties of materials. Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors. Understand the basic idea about superconductors and their classifications.	
	<b>Maths-Linear Algebra and Numerical Analysis</b>	Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems. Represent mathematical information and communicate mathematical reasoning symbolically and verbally. Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning	
	<b>Maths-Real Analysis</b>	describe the fundamental properties of the real numbers that underpin the formal development of real analysis demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration demonstrate skills in constructing rigorous mathematical arguments demonstrate skills in communicating mathematics.	
	<b>Maths-Discrete Mathematics</b>	Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms. Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples.	
<b>B.Sc. (Electronics)</b>			
<b>B.Sc. (Electronic) - I Year</b>	<b>Basic of Semiconductor and devices</b>	Understand different electronic passive component and their functioning. Characterize semiconductors, diodes, transistors. Design simple combinational and sequential logic circuits.	
	<b>Electronic Circuits and Fundamental of Digital Electronics</b>	Design half wave and full wave rectifiers with filters. Realize simple amplifier circuits using BJT and FET. Study and analyze the behavior of FETs and its type.	
	<b>Maths(Algebra &amp; Trigonometry)</b>	To inculcate knowledge on knows the selected aspects of classical algebraic structures. To inculcate knowledge on triangle properties, vector calculus and Fourier series basic concepts.	
	<b>Maths(Calculus and Differential Equation)</b>	To inculcate knowledge on the ability to find the effects of changing conditions on a system. To inculcate knowledge on solving algebraic equations of first and second order and basic information on Laplace transforms.	
	<b>Maths(Vector Analysis and Geometry)</b>	Developing the expressivity in mathematics thorough inquiry and connecting mathematical concepts. Creating the relationship of mathematics with other subjects.	
	<b>Physics(Elements of Mathematical Physics, Mechanics &amp; Properties of Matter)</b>	To get know the fundamental knowledge of mechanics, properties of matter and gravitation To make able student for explaining the motion and force system	
	<b>Physics(Thermodynamics and Statistical Physics)</b>	To familiar with the fundamental principle and laws of Thermodynamics To explain historical background of development of laws of thermodynamics To understand the use of concept of probability in statistical physics	
	<b>Digital Electronics and Microprocessor</b>	To study the Number systems and the inter conversion between them, Boolean algebra and the simplification of logic circuits To familiar with Convertors Arithmetic circuits, Multiplexing and Demultiplexing operations and a few logic families To understand the fundamental of Microprocessor, Instruction set of 8085	
	<b>Operational Amplifier and Instrumentation</b>	Learn Differential amplifier, function of operational amplifier and Amplifier parameters Study of application of Op-amp. Understand the working of Signal generators. Functioning of Timer IC555	
	<b>Maths (Abstract Algebra)</b>	Be familiar with abstract topics in algebra; mainly groups, rings and their property. Appreciate that common properties of certain mathematical objects can be absorbed and studied.	
<b>B.Sc. (Electronic) - II Year</b>	<b>Maths (Advanced Calculus)</b>	Develop ability to solve problems in the geometry and analysis using in differential forms Develop capacity to both prove results and solve problems	
	<b>Maths (Differential Equations)</b>	To inculcate knowledge on solving algebraic equations of I and II order. Computation the trajectory of a space probe requires the accuracy in numerical solution of a system of ordinary differential	
	<b>Physics (Optics)</b>	To familiar with basics of Optics and properties of light. To construct interest in students for the knowledge of concepts is physical and geometrical physics	
	<b>Physics (Electrostatics, Magneto Statics &amp; Electrodynamics)</b>	To understand the concepts of electric fields, electric flux, electric potential, dielectrics and polarization vector. To develop knowledge of applicative use of Coulomb's law, Gauss's law Ampere's law, Faraday's law and Lorentz force.	
	<b>B.Sc(Electronic)-III Year</b>	<b>Electronics-Thyristors, Ic Technology, Microprocessor And Electrical Motors</b>	Describe the working and characteristics curve of electronics(power) devices. Apply standard device models to explain/calculate critical internal parameters of semiconductor devices Ability to understand the IC technology of Silicon Crystal and behaviour of the materials. Ability to understand the working and behaviour of Switches and Electrical Motors.

		Describe the Intel 8085/8086 architecture with explanation of internal organization of some popular	
<b>Electronics-Communication Electronics</b>		Apply the knowledge of statistical theory of communication and explain the conventional digital communication system.	
		Apply the knowledge of signals and system and evaluate the performance of digital communication system in the presence of	
		In depth knowledge of different types of analog communication system and different modulation techniques used in these	
		Student understand the basic knowledge necessary for transmitting and receiving information	
		Student understand different types of modulation and demodulation	
		Student can solve analog and digital modulation problems	
		Ablity to understand the deep knowledge of different tpye Antennas, Television engineering, TV Transmitter and Receiver.	
<b>Physics-Quantum Mechanics And Applications Quantum Mechanics</b>		This course will enable the student to get familiar with quantum mechanics formulation.	
		After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation.	
		The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student	
		Through understanding the behavior of quantum particle encountering a i) barrier, ii)potential, the student gets exposed to solving non-relativistic hydrogen atom	
		Study of influence of electric and magnetic fields on atoms will help in understanding Stark effect and Zeeman Effect	
<b>Physics-Solid State Physics</b>		At the end of the course the student is expected to learn and assimilate the following	
		A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by Crystallin materials	
		Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.	
		At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.	
		Secured an understanding about the dielectric and ferroelectric properties of materials.	
		Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.	
		Understand the basic idea about superconductors and their classifications.	
<b>Maths-Linear Algebra and Numerical Analysis</b>		Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.	
		Represent mathematical information and communicate mathematical reasoning symbolically and verbally.	
		Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning	
<b>Maths-Real Analysis</b>		describe the fundamental properties of the real numbers that underpin the formal development of real analysis	
		demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration	
		demonstrate skills in constructing rigorous mathematical arguments	
		demonstrate skills in communicating mathematics.	
<b>Maths-Discrete Mathematics</b>		Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in	
		problem solving	
		Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in	
		Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms.	
		Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples.	
<b>B.Sc. (Mathematics)</b>			
<b>B.Sc (Maths) - I Year</b>	<b>Algebra,Vector Analysis and Geometry</b>	Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix. using	
		To find the Eigen values and corresponding Eigen vectors for a souare matrix.	
		Using the knowledge of vector calculus in geometry.	
	<b>Calculus and Differential Equations</b>	Inhance the knowledge of three dimensional geometrical figures (eg. cone and cylinder).	
		Sketch curves in a plane using its Mathematical properties in the different coordinate systems of reference.	
Using the derivatives in Optimization, Social sciences, Physics and Life sciences etc.			
		Formulate the Differential equations for various Mathematical models.	
		Using techniques to solve and analyze various Mathematical models.	
<b>BSc (Maths) - II Year</b>	<b>(Major 1) Abstract Algebra and Linear Algebra</b>	1. Recognize the Algebraic structure as a group, and classify them as abelian, cyclic and permutation group, etc	
		2. link the fundamental groups and the symmetrical figures.	
		3. Analyze the subgroup of cyclic groups	
			4. Explain the significance of the notion of cosets, normal subgroups and Quotient groups.
			6. The fundamental concept of rings, fields, subrings, integral domain in the corresponding morphisms. Analyse whether a finite set of vector space.
		7. Understand the linear transformations, rank and nullity, Matric of a linear transformation and change the basis.	
		8. Compute the characteristics polynomial, Eigenvalues, Eigen vaectors and Eigenspace as well as geometric and Algebraic multiplicities of an Eigen value and apply diagonalization result.	
	<b>(Major 2) Advanced Calculus and Partial Differential Equations</b>	1. Understand many properties of the real line R and sequences.	
		2. Calculate the limit superior, the limit inferior, and the limit of a bounded sequence. The course will enable the students to:	
		3. Apply the mean value theorems and Taylor's theorem.	
		4. Apply the various tests to determine convergence and absolute convergence of an infinite series of real numbers.	
		5. Formulate, classify and transform partial differential equations into canonical form.	
<b>B.Sc (Maths) - III Year</b>	<b>Maths-Linear Algebra and Numerical Analysis</b>	Apply mathematical methods involving arithmetic, algebra, geometry, and graphs to solve problems.	
		Represent mathematical information and communicate mathematical reasoning symbolically and verbally.	
		Interpret and analyze numerical data, mathematical concepts, and identify patterns to formulate and validate reasoning.	
	<b>Maths-Real Analysis</b>	describe the fundamental properties of the real numbers that underpin the formal development of real analysis	
		demonstrate an understanding of the theory of sequences and series, continuity, differentiation and integration	
demonstrate skills in constructing rigorous mathematical arguments			
		demonstrate skills in communicating mathematics.	

	<b>Maths-Discrete Mathematics</b>	Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in problem solving. Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving. Be able to use effectively algebraic techniques to analyse basic discrete structures and algorithms. Understand asymptotic notation, its significance, and be able to use it to analyse asymptotic performance for some basic algorithmic examples.
<b>B.Sc. (Physics)</b>		
<b>B.Sc (Physics) - I Year</b>	<b>Major-1 Thermodynamics</b>	On completion of this course the student will learn about Apply various laws of thermodynamics to various processes and real systems. Apply the concept of Entropy, Calculate heat, work and other important thermodynamic properties for various ideal gas processes. Estimate performance of various Thermodynamic gas power cycles and gas refrigeration cycle and availability in each case. Explain the concepts of entropy, enthalpy, reversibility and irreversibility. Estimate the condition of steam and performance of vapour power cycle and vapour compression cycle.
	<b>Minor-2 Mechanics</b>	On completion of this course the student will learn about : Explain the concepts of gradient of scalar & vector field, stokes and Green's theorem To study the rigid body, centre of mass, moment of inertia and Poision's ratio. Explain the concepts of inter molecular force, surface tension, tengential angle, viscosity and Euler's equation. Explain the concepts of conservative & non-conservative force field, gravitational potential, central force etc. To study the concepts of transformation, mass-energy equivalancy, Astronomical distance, black holl and Chandrashekhar limit.
<b>BSc(Physics)- II Year</b>	<b>Waves and Optics</b>	1. Develop an understanding of various aspects of harmonic oscillations and waves specially superposition of collinear and perpendicular harmonic oscillations. 2. Explain several phenomena of daily life that can be explained as wave phenomena. 3. Understand various optical phenomena, principles, workings and applications. 4. Use the principles of wave motion and superposition to explain the Physics of polarisation, interference and diffraction.
	<b>Electricity, Magnetism and Electromagnetic Theory</b>	1. Understand the basic concepts of electricity and magnetism and their applications. 2. Apply various network theorems and their applications in electronics, electrical circuit analysis, and electrical machines. 3. Understand the construction and working of ballistic galvanometer and cathode ray oscilloscope. 4. Understand the concept of electromagnetic waves and their reflection and refraction from a plane surface.
<b>BSc(Physics)- III Year</b>	<b>Quantum Mechanics and Spectroscopy</b>	1. Know the quantum mechanics and its Applications. 2. Explain the atomic structures and X-ray 3. Analyse the molecular spectra such as electronic, rotational and vibrational. 4. Identify the various materials using Raman spectroscopic techniques. 5. Explain the ground state properties of the nucleus for study of the nuclear structure behaviour 6. Understand the basic properties of nanoparticles.
	<b>Solid state Physics and Devices</b>	1. Understand the necessity of quantum mechanics and its applications. 2. Explain the atomic structures and X-rays. 3. Identify the molecular spectra such as electronic, rotational and vibrational 4. Identify the various materials using the Raman spectroscopic technique 5. Use different types of diodes and transistors in various electronic applications 6. Analyze the amplifiers and oscillators.
<b>B.Sc. (Biotechnology)</b>		
<b>B.Sc (Biotechnology) I yr</b>	<b>Cell Biology and Biochemistry</b>	Understand the basics of cell biology Appreciate the importance of bonding and spatial arrangements of molecules for proper functioning and stability. Understand both the physical as well as chemical properties of biomolecules. Students can also go for medical laboratory technique courses, opening opportunities in hospitals and pathological laboratories. Students could pursue a career in biochemical testing. The decrease or increase in the amount of some of the biomolecules can have clinical significance.
	<b>Microbiology and Immunology</b>	Understand microbial diversity and nutrition Understand immune system, its properties and types Understand the microbial growth system Discuss immunoglobulin structure, types and functions and can apply the concept of hypersensitivity and vaccination for different diseases. Perform various immunological techniques
<b>B.Sc (Biotechnology) II yr</b>	<b>Basic Molecular Biology</b>	Students will be able to explain role of different protein/ enzymes involved in cell signalling. They will be able to understand mechanism of genetic damage caused by mutation and role of various repair system in neglecting the effect of these mutation. Students will be able to explain mechanism of DNA replication, transcription, translation and other related processes
	<b>Recombinant DNA Technology</b>	The objectives of this course are to teach students with various approaches to conduct genetic engineering and their applications in biological research as well as in biotechnology industries. Genetic engineering is a technology that has been developed based on our fundamental understanding of the principles of molecular biology and this is reflected in the contents of this course. Given the impact of genetic engineering in modern society, the students should be endowed with strong theoretical knowledge of this technology. In conjunction with the practicals in molecular biology and genetic engineering, the students should be able to take up biological research as well as placement in the relevant biotech industry
<b>B.Sc (Biotechnology) III Yr</b>	<b>Molecular Biology and Genetic Engineering</b>	Study the basic concept of DNA, RNA and Replication model of DNA Disuss Eukaryotic chromosomal organization and chromatinf structure Discuss origin of life Understand the techniques of recombinant DNA technology. Learn mutation and its types.
	<b>Applied Biotechnology</b>	Discuss Microbial Biotechnology and its techniques. Study Plant Tissue Culture techniques and genetic manipulations of plant. Discuss Immunology and Animal Biotechnology Learn Fermentation Technology

		Discuss Environment Biotechnology
<b>B.Sc. (Biochemistry)</b>		
B.Sc (Biochemistry) I yr	Biomolecules	Get knowledge of application and scope of Biochemistry Will understand how water works as a Biological solvent Discuss Function and properties of Carbohydrates Discuss Function and properties of proteins Discuss Function and properties of Nucleic acid
	Biophysics and Biochemical techniques	Understand concept of bioenergetics Discuss hydrodynamic methods Discuss Function and properties of Carbohydrates Will get technical knowledge of chromatography and electrophoresis Discuss spectroscopic and Radio isotopic techniques
B.Sc (Biochemistry) II yr	Enzymology	Study enzyme classification and isolation techniques Measure and expression enzyme activity-enzyme assay Discuss enzyme purification and enzyme kinetics Understand role of Vitamins and enzyme catalysis reactions Study industrial and clinical applications
	Intermediary Metabolism	Understand general features of metabolism, carbohydrate metabolism and glyconeogenesis Study Electron transport chain and oxidative phosphorylation Discuss Lipid metabolism and biosynthesis of saturated and unsaturated fatty acids Learn amino acid metabolism, urea cycle and degradation and biosynthesis of amino acids Study Nucleotide metabolism, biosynthesis and degradation of purines and pyrimidines
B.Sc (Biochemistry) III Yr.	Molecular Biology	Study the basic concept of Genetic Information Get knowledge of DNA replication Discuss about transcription and translation techniques  Learn genetic code and regulation of gene expression  Get knowledge of Recombinant DNA Technology and Mutation
	Nutrition, Clinical and Environmental Biochemistry	Learn basic concept of Nutrition and Dietary habits Study Nutritive and calorific values of foods. Study clinical biochemistry and quality control methods. Discuss clinical enzymology Understand different types of pollution and methods of its prevention.
<b>B.Sc. (Zoology)</b>		
B.Sc. (Zoology) I yr	Major- Invertebrata	Learn about the importance of systemic, taxonomy and phylogeny to get a concrete idea of evolution of non-chordate phyla. Understand the various morphological, anatomical structures and functions of animals of different phyla. Get the knowledge about economics, ecological and medical significance of various animals in human welfare. Understand the important parasites and their control measures.
	Major P-2 Cell Biology, Reproductive biology and Developmental Biology	Discuss cell structure and its various theories. Understand structure and functions of cell and its organelles. Understand cell cycle and cell division. Understand the importance of latest reproductive trends, reproductive techniques to be applied for human welfare. Discuss about the organogenesis and fate map.
	Elective: Human Diseases	To gain the knowledge of various human diseases. To understand the causes of human diseases. To explain the structures of disease causing virus, bacteria and protozoa.
B.Sc. (Zoology) II yr	Vertebrates and Evolution	Discuss Origin of chordates and its classification Understand the comparative study of girdles, brain and all systems Discuss origin of life, Modern synthetic theories Understand the concept of micro, macro and mega evolution Discuss about the fossils and its formation
	Animal Physiology and Bio-Chemistry	Studied about the metabolism of Carbohydrate, Fat and Protein. Studied the basic concept of immunology, types and its components. Get knowledge of enzymology Discuss biological oxidation and role of co-enzymes in ETC Understand the structure and function of different endocrine glands.
B.Sc. (Zoology) III yr	Genetics	Understood the theories of classical genetics  Studied the genetic variation through linkage and crossing over, chromosomal aberrations and sex determination. Understood the molecular structure of genetic materials and understood the mechanism of gene expression and regulation. .Familiar with the tools and techniques of Genetics  Understood the applications of Genetics
	Ecology and Applied Zoology	Understand the concept of ecology. Studied about the environment and wild life conservation. Discuss various methods of energy transfer in ecosystem. Learn about aquaculture and its productions Get Knowledge of Major carp culture.
<b>B.Sc. (Botany)</b>		
B.Sc. (Botany) I yr	Minor (Basic Botany)	This course will help the student to understand the diversity of plants and evolutionary process in plant kingdoms.

		It gives an accounts of plant adaptations from aquatic condition to colonize terrestrial habitat.
		The changes in morphological, anatomical and reproductive structures that propel plant evolution can be investigated.
		The economic importance and significance of plants in nature will be understood.
		They will be acquainted with locally prevalent microbial diseases of plants and humans
	<b>Open Elective(Nursery Management)</b>	It is directly related with entrepreneurship development at small and large scale.
		It gives an opportunity to understand the methods of propagation, techniques of implementation, advance knowledge of High-tech nursery establishment as a venture is possible after completing this course.
		It also provides skills of practical application for nursery establishment and related businesses such as marketing of cocopeat,
<b>B.Sc. (Botany) II yr</b>	<b>Structure Development and Reproduction of Flowering Plants</b>	Learn about the plant tissue system
		Know the organization of root apical meristem and root anatomy
		Understand the organization of shoot apical meristem and shoot anatomy
		Understand the Leaf system and their anatomy
		Understand about the fundamentals of plant embryology
	<b>Plant ecology, biodiversity and phytogeography</b>	Know components and their interaction in an ecosystem.
		Aquire the values of biodiversity
		Explore the methods of conservation of nature
		Understand the phytogeographical regions of India
<b>B.Sc. (Botany) III Year</b>	<b>Plant Physiology and Biochemistry</b>	Understand the plant water relation, mineral nutrition and biomolecule structure
		Understand the photosynthesis and plant respiration process
		Will get the knowledge of enzymology
	<b>Cell Biology and Genetics</b>	To impart understanding of internal cell structure and their organisation.
		To develop the skills for the preparation of smear for study of cell division
		To develop the skills for the understanding of Mendel's law
		Know about the genomic organization of living organisms, study of genes genome, chromosome etc.
		Understand the principle and basic protocols for Plant Tissue Culture.
		Understand the fundamentals of Genetic engineering
<b>B.Sc. (Microbiology)</b>		
<b>B. Sc. (Microbiology) I Yr</b>	<b>Cell Biology &amp; General Microbiology</b>	Indian traditional knowledge and historical background of microbiology.
		Structures and transmission of Viruses.
		Cell structures and cell organization of bacteria.
		Different kinds of unicellular prokaryotes and eukaryotic microorganism based on specific characteristics.
		General characteristics of important Eubacteria.
		Recall the basic lab glassware to be used in the laboratory
	<b>Microbial Techniques</b>	Summarize different methods of sterilization and isolation of pure cultures
		Understand the working of different kinds of instruments and microscope.
		Apply serial dilution technique to isolate the bacteria.
		Practice different methods to culture bacteria in the laboratory
<b>B. Sc. (Microbiology) II Yr</b>	<b>Biochemistry &amp; Microbial Physiology</b>	Understand the basic concept of Biochemistry and its applications.
		Learn metabolism of microbes including respiration etc.
		Discuss the composition cell like carbohydrate, proteins lipids.
	<b>Microbial Genetics and Molecular Biology</b>	Understand theories of evolutions of early forms.
		Studied about microbial genetics and different methods of gene transfer in microbes.
		Discuss cloning techniques and various vectors system.
		Learn methods of production of transgenic microbes, animals and plants and their application in Biotechnology.
		Understand genomic and C-DNA libraries.
<b>B. Sc. (Microbiology) III Yr</b>	<b>Applied and Environment Microbiology</b>	Studied the basic concept of fermentation, types and its applications.
		Experimental models and raw material used in fermentation.
		Discuss Industrial applications in microbiology.
	<b>Immunology and Medical Microbiology</b>	Discuss Immunity how it works.
		Studied about genetic manipulations of immune diseases.
		Discuss various microbial diseases and their diagnosis.
		Learn production methods of antibiotics.
		Discuss methods for vaccination and their types.
<b>B.Sc. (Chemistry)</b>		
<b>B. Sc. Chemistry I Year</b>	<b>Physical Chemistry</b>	Explain Mathematical Concept related to chemistry and utility.
		Understand about gaseous state and related characteristics.
		Explain chemistry of liquid and solid state.
		Discuss chemical kinetics and its scope
		Discuss chemical equilibrium, its laws and applications
		Understand the colloidal solution, its types, properties and purification methods
		Understand radioactivity, theories, types of nuclear reactions and applications
	<b>Inorganic Chemistry</b>	Understand atomic structure and periodic properties of elements
		Understand chemical bonding, types of bonds/interactions and chemistry of Noble gases
		Explain about the periodicity and characteristics of s and p block elements.
	<b>Organic Chemistry</b>	Understand Carbohydrates, classification, nomenclature, properties and structure
		Understand about Fats & oils, detergents and their properties
		Understand Amino acids, classification, nomenclature, structure and properties
		Understand about synthetic dyes and heterocyclic compounds
<b>B. Sc. Chemistry II Year</b>	<b>Physical Chemistry</b>	Define entropy and its sign for compounds, terms and laws related to thermodynamics
		Understanding of solid solution, liquid – liquid solution and partially miscible solution, related properties and applications.
		To know about thermochemistry and to predict heats of reaction using bond energies and compare these values to heat of reaction obtained from Hess' Law or heats of formation calculations.
		Understanding of various type of electrodes
		Describe Carnot cycle and its efficiency.
		Understand Henderson Hazel equation
		Understand the concept of Free energy, related equation and calculations.
		Understand phenomenon of surface chemistry, Classify catalysis and its application



		Describe electrochemistry, Arrhenius equation, Ostwald's Dilution law, Onsager' equation, their limitations and applicability.
		Understand phase equilibria, terms related, one component, two component and eutectic system.
		Calculate the equilibrium constant for an insoluble salt given solubility data and vice versa
	<b>Inorganic Chemistry</b>	Describe transition elements and their periodicity in the respective series with reason.
		Understanding the chemistry of lanthanides and actinides, similarities, differences and gradations.
		Understanding of molecular orbital theory with respect to octahedral and tetrahedral complexes
		Understand coordination compounds
		Understand concept of acid and bases and different theories
	<b>Organic Chemistry</b>	Explain Nomenclature of ethers and their methods of preparations
		Interpret IR spectra of simple organic compound
		Describe nomenclature, classification, physical properties and chemical properties of Aldehydes, ketones, carboxylic acid and carboxylic acid derivatives.
		Understanding of nomenclature, classification, preparation, physical and chemical properties of alcohols and phenols.
		Understand nomenclature, properties and reactions of compounds of nitrogen
<b>B.Sc. Chemistry III Year</b>	<b>Physical Chemistry</b>	Explain preparation, and properties of Aryl halides.
		Understand elementary quantum mechanics, principles and applications in chemistry
		Understand molecular orbital theory and its comparison with valance bond theory
		Understand the basic terminology and principles of spectroscopy.
		Understand vibrational and rotational spectrum
		Understand the concept, selection rules, principles and applications of Raman Spectra,
		Understand photochemistry, laws related and applicability.
		Understand Woodward Fieser rule and application.
		Describe role of various metal ions, biological role of alkali and alkaline earth metal
		Understand optical activity of compound, dipole moment and its measurement, polarisation and its types
	<b>Inorganic Chemistry</b>	Able to explain Clausius Mossotti Equation, types of magnetism,
		Explain theories of hard and soft acids and bases
		Classify structure and bonding in silicones and triphosphonitrile chloride.
		Explain metal carbonyl complexes, synthesis, structure, bonding, and preparation of some organometallic compounds.
	<b>Organic Chemistry</b>	Understand magnetic and electronic properties of transition metal complexes, type of coupling and transitions.
		Understand structure and bonding, hybridization, mechanisms of chemical reaction and types of intermediate
		Understand nomenclature, classification, physical & chemical properties, structure and applications of alkanes and cycloalkanes.
		Understand nomenclature, classification, physical & chemical properties, structure and applications of alkenes, cycloalkenes and dienes.
		Understand principles, selection rules, laws of IR, Raman, NMR spectroscopy.
		Understand organometallic and organosulphur compounds in terms of preparation, physical and chemical properties
<b>B.Com. (Accounting group)</b>		
<b>B.Com. I Year (Accounting Group)</b>	<b>Financial Accounting</b>	The objective of this course is to familiarize the students with basic concept & methods of financial accounting in practical way with reference to current scenario.
	<b>Business Mathematics</b>	The course is designed to describe mathematical relations and functions and to explain the relevance and use of different quantitative models and functions in solving business problems.
<b>B.Com. II Year (Accounting Group)</b>	<b>Corporate Accounting</b>	The main objective of this course is to help students for accounting procedure in corporate.
	<b>Cost Accounting</b>	The objective of this paper is to provide knowledge about the basic concept, accounting methods and solution of cost accounting.
<b>B.Com. III Year (Accounting Group)</b>	<b>Income Tax</b>	The objective of this paper contents is to providing basic conceptual knowledge and information about Indian Income Tax Act 1961.
	<b>Goods and service tax and custom Duty (G.S.T.)</b>	To acquaint the students with basic principles underlying the provisions of goods and service tax and custom duty, laws and to develop a systematic financial system.
<b>B.Com. (Management group)</b>		
<b>B.Com. I Year (Management Group)</b>	<b>Business Law</b>	The main objective of this course is to help students in understanding about the rules, regulation and framework of business law.
	<b>Business Organization</b>	The objective is to familiarize students with the concept of Business organization and its scope. It focuses on the formation of these organizations and their working.
<b>B.Com. II Year (Management Group)</b>	<b>Principle of Management</b>	The course focuses on the objective to increase both students knowledge of management and students ability to manage effectively.
	<b>Business Statistics</b>	The objective of this paper is to familiarize the students with statistical tools and techniques in current scenario.
<b>B.Com. III year (Management Group)</b>	<b>Management Accounting</b>	The objective of this paper is to familiarize the students with various tools and techniques of management accounting which is useful for business management in current scenario.
	<b>Auditing</b>	This course is designed to provide an introduction of auditing to accounting and finance students who are willing to upgrade their knowledge in financial audit techniques, International Standards on Auditing and International Financial Reporting Standards.
<b>B.Com. (Applied Economics)</b>		
<b>B.Com. ( Applied Economics ) I Yr</b>	<b>Micro Economics</b>	The aim of this paper is to acquaint the students with fundamental and basic concept of Micro economics.
	<b>Macro Economics</b>	The aim of this paper is to provide basic knowledge about various concepts of Macro Economics and its practical application.
<b>B.Com. ( Applied Economics ) II Yr</b>	<b>Indian Company Act</b>	To make the students aware about the legal provision of companies which are being adopted accordingly to modern scenario.

	<b>Banking and Insurance</b>	The objective of this course to familiarized with and understand the main framework of banking and insurance. Students should understand the main characteristics of banking and insurance operations.
<b>B.Com. ( Applied Economics ) III Year</b>	<b>Group A : Public Finance</b>	The objective of this paper is to provide detailed knowledge about public finance.
	<b>Group A - Financial Management</b>	The aim of this paper is to acquaint the students with fundamentals and basic concepts of financial management.
	<b>Group B : Principle of Marketing</b>	The objective of this paper contents is to provide basic conceptual knowledge about marketing management.
	<b>Group B - International Marketing</b>	The aim of this paper is to acquaint the students with fundamentals and basic concepts of International Marketing.
	<b>Group C - E Commerce and Marketing</b>	The objective of this paper contents is to provide basic of E-Commerce and types of E-Payment.
	<b>Group C - Financial Market and Investment Management</b>	The aim of this paper is to acquaint the students with fundamentals and basic concepts of Financial Market & Investment Management.
	<b>Group D - Organization theory and behaviour</b>	The aim of this paper is to provide basic knowledge about organizational behaviour and basic challenges of organizational design.
	<b>Group D - Human Resource Management and Industrial Relation</b>	The aim of this paper is to provide basic knowledge about Human Resource Management and industrial relation.
<b>B.Com. (Computer Application)</b>		
<b>B.Com. (Computer Application ) I Yr</b>	<b>Fundamental of computer and P.C. Software</b>	To review the basic concepts and functional knowledge in the field of computer application. To expose the students to computer application in the field of Business.
	<b>Desk Top Publishing (D.T.P.) and multimedia</b>	To review the basic concepts and functional knowledge in the field of computer application. To expose the students to computer application in the field of Business.
<b>B.Com. (Computer Application ) II Yr</b>	<b>Internet and E-Commerce</b>	The purpose of this course is to give students and overview about Internet and E-Commerce.
	<b>Relational Database Management System</b>	List and explain the fundamental concepts of a relational database system.
		Utilize a wide range of features available in a DBMS package.
		Analyze database requirements and determine the entities involved in the system and their relationship to one another.
		Develop the logical design of the database using data modeling concepts such as entity-relationship diagrams.
		Create a relational database using a relational database package.
		Manipulate a database using SQL.
Assess the quality and ease of use of data modeling and diagramming tools.		
<b>B.Com. (Computer Application ) III Year</b>	<b>Web Designing</b>	To review the basic concepts and functional knowledge in the field of computer application. and to expose the students to computer application in the field of Business.
	<b>Digital Marketing</b>	To review the basic concepts and functional knowledge in the field of computer application. and to expose the students to
<b>B.Com. (Taxation)</b>		
<b>B.Com. (Tax procedure and practice ) I Yr</b>	<b>Indian Tax</b>	The objective of this paper contents is to providing basic conceptual knowledge and information about income tax of India.
	<b>Goods and service tax</b>	The objective of this paper is to understand various concepts of Goods & Service Tax of India and also understand the impact of new regulation on business activities.
<b>B.Com. (Tax procedure and practice ) II Yr</b>	<b>Income Tax Procedure and Practice</b>	The objective of this paper contents is to provide basic conceptual knowledge and information about income tax.
	<b>Custom Duty Law and Practice</b>	The purpose of this course is to give students an overview of the customs and service tax procedure and practice.
<b>B.Com. (Tax procedure and practice ) III Year</b>	<b>Tax Planning for Individuals</b>	The course is designed so as to make students aware of tax planning for individuals. The course also provides students knowledge of the difference between tax avoidance and tax planning.
	<b>Corporate Tax Planning</b>	This course is designed to make the students aware of the corporate tax laws of India and its management.
<b>B.Com. (Office Management)</b>		
<b>B.Com. I Year (Vocational Group - Office Management and stenography)</b>	<b>Basic of Computer</b>	To review the basic concepts and functional knowledge in the field of computer application.
		To expose the students to computer application in the field of Business with reference to office working.
	<b>Basics of stenography</b>	The purpose of this course is to familiarize students with the basic concepts of stenography and its writing techniques based on Pitman & Rishi Agrawal Shorthand.
<b>B.Com. II Year (Vocational Group - Office Management and stenography)</b>	<b>Office Management</b>	The aim of this course is to acquaint students to understand the meaning of office management its routine functions, mailing system, correspondence, office machine and its uses etc.
	<b>Stenography with Computer</b>	The purpose of this course is to familiarize students with the basic concepts of stenography and its speed writing and transcription techniques.
		To review the basic concepts and functional knowledge in the field of computer application. To expose the students to computer application in the field of Business.
<b>B.Com. III Year (Vocational Group - Office Management and stenography)</b>	<b>Secretarial Practices</b>	The aim of this course to give the knowledge of students about role and duties of the secretary and basic function of office and their administration.
	<b>Advanced Stenography with Computer</b>	The aim of this course about advanced concept of advanced stenography and basic knowledge about computer.
<b>B.Com. (Tour and Travel)</b>		

B.Com. I Year (Vocational Group - Tour and Travel)	Tourism concept and products	The aim of this course is to familiarize the students with a brief background of tourism, its concepts, products, development and scope with special reference to India.
	Madhya Pradesh Tourism	The purpose of this course is to give students an overview about Madhya Pradesh Tourism.
B.Com. II Year (Vocational Group - Tour and Travel)	Travel Agency and Tour Operation	The aim of this paper is to familiarize students about the scope and function of travel agency and tour packages.
	India as a Tourist Destination	To give the knowledge about historical places and tourist spots of India to give the knowledge about Indian culture traditions
B.Com. III Year (Vocational Group - Tour and Travel Management)	Tour guiding excorting and interpretation	To provide the knowledge about tour guide and wild life and different type of tours.
	Tourism Marketing	This course offers students an insight the knowledge about tourism marketing including product and pricing and role of government in tourism.
<b>B.Com. (Principle Practice and Management Insurance)</b>		
B.Com. I Year (Vocational Group - Principle practice and management insurance)	Fundamental of Insurance and Banking	The objective of this course is to familiarized and understand the main framework of banking and insurance. Students should understand the main characteristics of banking and insurance operations.
	Life Insurance	The aim of this paper is to familiarized to students about the function of insurance and the scope of insurance industries.
B.Com. II Year (Vocational Group - Principle practice and management insurance)	Fire and marine Insurance	The objective of this paper is to make students aware about functions and procedure of fire marine insurance.
	Insurance and Financial Legislation	The course is drafted to study the principles of risk management and insurance as they pertain to management decision-making. Students will examine sources of risk, techniques of managing risk, and the forms of insuring devices in the life, health, property, and employee benefits areas.
B.Com. III Year (Vocational Group - Principle practice and management insurance)	Property and liability Insurance I	To familiarize students about various forms of property & liability insurance & their benefit.
		To give them the practical knowledge about their application, causes & consequences, claims & their settlement procedure.
	Property and Liability Insurance II	The course is drafted to study the principles of risk management and insurance as they pertain to management decision-
<b>B.Com. (Advertising Sales Promotion and Sales Management)</b>		
B.Com. I Year (Vocational Group - Advertising sales promotion and sales)	Advertising – I	The aim of this paper is to acquaint the students with fundamental and basic concept of advertising.
	Marketing communication	The objective of this course is to develop an appreciation and understanding of the individual elements of the marketing communication mix: with particular emphasis on advertising and direct marketing, and including interactive media, sales promotion and public relations.
B.Com. II Year (Vocational Group - Advertising sales promotion and sales management)	Advertising – II	The objective of this course is to familiarize student with fundamental and basic concept about advertising agency and media planning.
	Personal selling and salesmanship	The purpose of this paper is to make the students aware about personal selling and salesmanship strategy in modern scenario.
B.Com. III Year (Vocational Group - Advertising sales promotion and sales)	Management of the sales force	To equip students with the technique of advertising, sales promotion, sales force management etc. To equip them with skills required to motivate and enhance their productivity.
	Online Marketing	The purpose of this course is to give knowledge about internet and technologies, Mobile Commerce, Electronic Payment system, Security aspect in E-Commerce.
<b>B.Com. (Honors)</b>		
B.Com. Honours I Year (Accounting Group)	Financial Accounting (Paper – I)	The objective of this course is to familiarize the students with basic concept & methods of financial accounting in a practical way in current scenario.
	Business Mathematics (Paper – II)	The course is designed to describe mathematical relations and functions and to explain the relevance and use of different quantitative models and functions in solving business problems.
B.Com. Honours II Year (Accounting Group)	Corporate Accounting	The main objective of this course is to give practical knowledge to accounting procedure and followed in corporate.
	Advanced Accounting and Practice	The subject focuses on advance concept of financial accounting and gives exposure to theory and practical of corporate investment.
B.Com. Honours III Year (Accounting Group)	Management and Cost Accounting	The objective of this Paper is to familiarize the students with various tools and techniques of management accounting which is useful for business management in current scenario and also the knowledge about cost concept, absorption and marginal costing and budgetary control.
	Income Tax Law and Practices.	The objective of this paper contents is to providing basic conceptual knowledge and information about Indian Income Tax Act 1961.
B.Com. Honours I Year (Management Group)	Principle of Management	The course focuses on the objective to increase both students knowledge of management and enhance students ability to manage everything and efficiently.
	Business Organization	The objective is to familiarize students with the concept of Business organization and its scope. It focuses on the formation of these organizations and their working.
B.Com. Honours II Year (Management Group)	Marketing Management	The objective of this course is to familiarize students with the marketing concept, core principles and strategies of marketing.
	Financial Management	The objective of this course is to provide advance knowledge about financial management and its practical application.
B.Com. Honours III Year (Management Group)	Human Resource Management	The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the various policies and practices of human resource management.
	Research Methodology	Understand basic concept and process of research and its methodologies, research process, sampling design, analysis and report writing.
B.Com. Honours I Year (Vocational Group)	Micro Economics	The aim of this paper is to acquaint the students with fundamental and basic concept of Micro economics.
	Macro Economics	The aim of this paper is to provide basic knowledge about various concepts of Macro Economics and its practical application.
B.Com. Honours II Year (Vocational Group)	Paper I - Public Finance	The objective of this paper is to provide detailed knowledge about public finance.
	Paper II – Advanced Statistics	The objective of this course is to achieve a deep understanding of particular statistical methods and to learn to use some advanced tools for analyzing and developing statistical methods.
B.Com. Honours III Year (Applied Economics Group)	Banking Law and Practices	The object of this paper is to provide detailed knowledge about principles of Banking and Indian Banking system.
	Indirect Tax Law and Practices	The aim of this paper is to provide basic knowledge about various concepts about central excise duty, custom duty, central sales tax, VAT etc.
<b>B.B.A.</b>		
B.B.A. I Year	Financial Accounting	The objective of this course is to familiarize the students with basic concept & methods of financial accounting in a practical way with reference to current scenario.
	Business Mathematics	The course is designed to describe mathematical relations and functions and to explain the relevance and use of different quantitative models and functions in solving business problems.
	Principles of Management	To help the student to be acquainted with the basic guidelines and principles of management.

	<b>Communication Skills</b>	To educate the students in the skills of communications so as to help them to interact with the society effectively in their career.
	<b>Micro Economics</b>	To help the students to acquire basic knowledge of micro environment concept.
	<b>Business States</b>	The objective of this course is to help the students in understanding the various statistical methods, techniques in business studies and analysis/discussion.
<b>B.B.A. II Year</b>	<b>Financial Management</b>	The objective of this paper is to familiarize the students with various tools and techniques in financial decision making and control.
	<b>Human Resource Management</b>	The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the various policies and practices of human resource management.
	<b>Organizational Behaviour</b>	This course aims to improve students understanding of human behavior in organization and the ability to lead people to achieve more effectively toward increased organizational performance
	<b>Marketing Management</b>	The objective of this course is to familiarize students with modern marketing concept tools and techniques.
	<b>Project Management</b>	The objective of this course is to familiarize students with multiple project Idea, project management, network techniques, project review and its administrative aspects.
	<b>Marketing Research</b>	The objective of this course is to enhance the students about understanding of the marketing research industry, applications of Marketing Research.
		To explore different approaches of marketing research.
To be able to exploit Marketing Research data for management decision making.		
<b>B.B.A. III Year</b>	<b>Entrepreneurial Development (Group VII)</b>	The objective of this course is to equip students with basic skills for starting their own enterprises.
	<b>Management Information System (Group VII)</b>	The objective of this course is to introduce the students with the management information systems and its application in organizations.
	<b>Business Environment (Group VIII)</b>	To make the students understand the changing nature of the business environment in the context of national economy. To
	<b>Business Law (Group VIII)</b>	The main objective of this course is to help students in understanding about the Act, rules, regulation and framework of business law.
	<b>Elective A (Marketing) : Consumer Behaviour</b>	To develop an understanding of consumer behavior from a variety of perspectives and understand consumer buying nature and its behaviour.
	<b>Elective A (Marketing) : Advertising Management and Sales Promotion</b>	Through this course Advertisement and Promotion students will learn about the principles and significance of advertisement and sales promotion techniques for setting up business.
	<b>Elective B (Finance): Working Capital Management</b>	To acquaint and equip the students with the conceptual knowledge and Management of Working Capital
	<b>Elective B (Finance): Corporate Taxation</b>	This course is designed to make the students aware of the corporate tax laws of India and its management.
	<b>Elective C (HRM): Human Resource Development</b>	The objective of this course is to sensitize students to the various facets of managing people and to create an understanding of the performance appraisal in human resource development.
	<b>Elective C (HRM): Wages and Salary Administration</b>	To aim of this course is to provide the knowledge about wages and salaries administration.
<b>Bachelor of Library and Information Science (B.L.I.Sc.)</b>		
<b>Bachelor of Library &amp; Information Science (B.L.I.Sc.)</b>	<b>Foundations of Library and information science</b>	To make students appreciate the basic philosophy and ethics of librarianship.
		To understand the role and evolution of library as a social institution.
		To know about various types of libraries, their nature, objectives and services.
		To create awareness about the role of professional library associations.
		To understand the concept of Resource Sharing and extension activities in libraries.
		To generate awareness about legal, political and ethical aspects of information and its use.
	<b>Management of Libraries and Information Centres</b>	To understand basic functions of administration.
		To be familiar with housekeeping routines and work flow in libraries
		To know about financial management in libraries.
		To be familiar with library statistics and records.
	<b>Knowledge organisation &amp; processing (theory)</b>	<b>Part-A</b>
		To understand the importance of library classification in organization of knowledge.
		To know the elements of library classification.
To understand the formation of subjects in the Universe of Subjects.		
To be familiar with major schemes of classification.		
<b>Part-B</b>		
To understand the objectives, functions and types of library catalogues.		
To understand the fundamentals of cataloguing and catalogue entries.		
To understand the principles and practices of document description.		
To understand the role of cataloguing in retrieving library material		
<b>KOP Practical (Library classification &amp; cataloguing practical)</b>	<b>Method-I LIBRAY CLASSIFICATION PRACTICAL</b>	
	To develop skills of classification.	
	To develop skills in subject analysis.	
	To develop proficiency in using Dewey Decimal Classification to construction ClassNumbers for documents of different disciplines / subjects.	

		To develop skills in subject analysis and synthesis of different facets. To develop proficiency in using Dewey decimal classification to construction Class <b>Method-II LIBRARY CATALOGUING PRACTICAL.</b>
	<b>(Classification and Cataloguing Practical DDC 19th Edition and AACR-II)</b>	To develop skills of cataloguing. To understand the rules and practices of document description for Books(Monographs) according to Anglo American Cataloguing Rules-II.  Preparing Catalogue Entries (Main, Added and Reference Entries) for Book (Monographs) using Anglo American Cataloguing Rules- Second revised Edition and assigning subject headings using list of subject headings.  To understand the rules and practices of document description for non-book materials according to Anglo American Cataloguing Rules-II.  Preparing Catalogue Entries (Main, Added and Reference Entries) for Non-Book Materials including electronic resources using Anglo American Cataloguing Rules- Second revised including electronic resources using Anglo American Cataloguing Rules- Second revised edition.
	<b>Information sources, Service and user studies</b>	To understand the different types of information sources To develop familiarity with standard reference sources. To develop skills of critical evaluation of reference sources. To understand the nature and purpose of reference and information services. To develop skills for reference and information services.
	<b>Information storage and retrieval</b>	To know about information retrieval and its various aspects in details. To know about the various indexing and abstracting tools and services. To know about the various national and international network systems. To identify the various reprography services and techniques .
	<b>Information Technology (Basics)</b>	To acquaint the students with the basic concepts of computers technology. To acquaint the students with the basic concept of computer networks. To develop familiarity with some library management software. To understand various aspects of library automation. To know how computers can be used in libraries. To discuss impact of computer technology in libraries.
<b>BPT</b>		
<b>BPT I YEAR</b>	<b>Human Anatomy</b>	By the end of the course the student will: Understand structure and functions of human body. Understand detail knowledge about muscles, soft tissues and bones. Understand the basics of various organ systems in the body.
	<b>Human Physiology</b>	By the end of the course the student will: Acquire the knowledge of the relative contribution of each organ system in maintenance of the milieu interior [Homeostasis] Be able describe physiological functions of various systems, with special reference to Musculo-skeletal, Neuro-motor, Cardio-respiratory, Female urogenital function and alteration in functions with ageing. Analyze physiological response & adaptation to environmental stresses with special emphasis on physical activity and temperature. Acquire the skill of basic clinical examination, with special emphasis to Peripheral & Central Nervous system, cardiovascular & Respiratory system, & Exercise tolerance/ Ergography.
	<b>Fundamental of medical electronics &amp; Fundamentals of physics, biomechanics and biomechanical modalities</b>	This course will enable the student to understand the basic electricity and medical electronics and its application in This course will enable the students to understand the basic mechanics and their application in physiotherapy in restoration of physical function.
	<b>Psychology sociology</b>	This course will introduce students to the basic sociological concepts principles and social processes, social institutions (in relation to the individual, family and community) and the various social factaffecting the family in rural and urban communities in India.
<b>BPT II YEAR</b>	<b>Biochemistry &amp; pharmacology</b>	The course in Pharmacology and Biochemistry provides the student basic knowledge of Biochemistry and Pharmacology in order to understand the general biochemical process of drugs in the body and their importance in physiotherapy treatment.
	<b>Pathology &amp; microbiology</b>	Understand the concept of disease process. Study the historical background of various microorganisms.
	<b>General surgery, obstetrics &amp; gynecology</b>	This course follows the basic course on Anatomy, Physiology, Psychology, Sociology, Pathology and Microbiology and The objective of this course is that students at the end of course should have a broad understanding about common medical diseases, which they would be handling as a physiotherapist. They should have a brief idea about etiology, pathology and type and degree of disability the patient will have as a result of the disease, so that he/she as a Physiotherapist with physician should help the patient to achieve cure and/or ameliorate his/her illness and sufferings
	<b>General medicine including pediatrics &amp; geriatrics</b>	This course follows the basic course on Anatomy, Physiology, Psychology, Sociology, Pathology and Microbiology and provides knowledge about relevant aspects of General Medicine with emphasis on physiotherapeutics. The objective of this course is these students at the end of course should have a broad understanding about common medical diseases, which they would be handling as a physiotherapist. They should have a brief idea about Aetiology, pathology, Type and Degree of Disability the patient will have as a result of the disease, so that he/she as a physiotherapist with physician should help the patient to achieve cure and/or ameliorate his/her illness and sufferings.
	<b>Exercise therapy including yoga</b>	In these courses, the student will learn principles, techniques and effects of exercise as a therapeutic modality in the restoration of physical function. The objectives of this course is that the students will be able to list the indications and contraindications of various types of exercise and demonstrate the different techniques and describe their effects.
	<b>Electrotherapy</b>	In this course the student well learn the principles, techniques and effects of electrotherapy as a therapeutic modality in the restoration of physical function. The objective of this course is that the students will be able to list the indications and contraindications of various types of electrotherapy, modalities and demonstrate the different techniques and describe their effect.
<b>BPT III YEAR</b>	<b>Neurology including psychiatry &amp; neurosurgery</b>	To understand clinical manifestations of neurological and psychological disorders.  The rationale and implications of psychological disorders on disability. To understand the management of neural & psychological disorders.

	<b>Orthopaedics</b>	To understand an orthopaedic patient, common orthopaedic conditions and procedures. To understand applications of physical therapy in various orthopaedic conditions. To understand the implications of various orthopaedic conditions, and procedures on physical therapy.
	<b>Applied biomechanics and kinesiology</b>	To understand the Musculoskeletal surgical anatomy normal and pathological deviations.
	<b>Physiotherapeutics in orthopedic conditions</b>	To identify various Musculoskeletal dysfunction clinically. To set goals and apply therapeutic skills in different orthopaedic conditions.
	<b>Physiotherapeutics in neurology and neurosurgery</b>	To identify various neurological dysfunction clinically. To set goals and apply therapeutic skills in different neurological conditions..
	<b>Physical evaluation, diagnosis &amp; prescription</b>	Student shall be able to acquire the concept of evaluation of functions and measurements in general and in disorders of Able to diagnose and measure the physical problems presented by the patients. In addition, the student shall be able to fulfill with 75% accuracy (as Measured by written, oral, Practical and Internal Evaluation) This course serves to integrate the knowledge gained by the students in both basic and Clinical Medical science subjects and physiotherapy subjects, thus enabling them to apply these in evaluation of functions and measurements in general and in clinical situations of dysfunctions of systems in order to reach a state of diagnosing the physical problems presented by the patients. The student shall also learn principles, techniques and effects of exercise as a therapeutic modality in the restoration of physical function.
<b>BPT IV YEAR</b>	<b>Physical diagnosis and prescription</b>	By the end of the course the student will: This course serves to integrate the knowledge gained by the students in both basic and Clinical Medical science subjects and physiotherapy subjects, thus enabling them to apply these in evaluation of functions and measurements in general and in clinical situations of dysfunctions of systems in order to reach a state of diagnosing the physical problems presented by the patients. The objective of this course is that after Lectures Demonstration, Practicals and Clinics, the student's wilt is able to acquire
	<b>Research methodology &amp; biostatistics</b>	<b>RESEARCH METHODOLOGY</b> To develop skills of critical thinking and selection of research strategy. To acquire skills to review literature, formulate problems, research writing and publishing. <b>BIOSTATISTICS</b> The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently.
	<b>Cardiothoracic diseases and surgeries</b>	Following the basic science and clinical science courses, this course introduces the student to cardio-thoracic conditions, which commonly cause disability. Particular effort is made in this course to avoid burdening the student with any detail pertaining to diagnosis which will not contribute to their understanding of the limitations, imposed by Cardio-thoracic pathology on the functioning of the individual. The objective of this course is that after lectures and demonstrations, in addition to clinics, the student will be able to demonstrate an understanding of Cardio-thoracic conditions causing disability and their management.
	<b>Physiotherapy in general &amp; cardio thoracic conditions</b>	This course serves to integrate the knowledge gained by the students in clinical cardio respiratory conditions with the skills gained in Exercise therapy Electrotherapy thus enabling them to apply those in clinical situations of dysfunction due to cardio respiratory pathology. The objective of this course is that Lecture, Demonstration, Practicals and Clinics, the student will be able to identify cardio respiratory dysfunction, treatment goals and apply their skills in Exercise therapy and Electrotherapy in clinical -tuations to restore cardio respiratory function.
	<b>Sports physiotherapy</b>	This course enables the student to understand about basic principles of Sports training, Mechanism of Sports injuries and their management in physiotherapy. The objectives of this course s that after Lectures, Demonstrations, Practical and Clinics, the student will be able to acquire concept of evaluation of sports and Sports injuries, and also will be able to provide Sports Training and Physiotherapy in particular to Sports injuries.
	<b>Community PT, rehabilitation &amp; disability prevention</b>	<b>COMMUNITY PHYSIOTHERAPY</b> This course provides knowledge about health care delivery programmes in Rural and urban areas and role of Physiotherapy in both Rural & Urban set ups with special emphasis to various community awareness programmes and preventive aspects of Enables the student to understand the effects of the environment and the community dynamics on the health of the individual The objective of this course is that after 60 hours of lectures, demonstrations, practical, clinics and filed visits, the student will be the students will be able to understand the various community awareness programmes and health disorders causing disability and the role of physiotherapy in community awareness and prevention of health disorders causing disability. In addition, the student will be able to fulfill with 75% accuracy (as measured by written, oral and practical evaluation), the following objectives of the course. <b>REHABILITATION &amp; DISABILITY PREVENTION</b> To understand the concept of Rehabilitation and team approach. Principles of Physiotherapy in Rehabilitation. Disability evaluation & management.
	<b>Physiotherapy ethics, management &amp; administration ( non university exam)</b>	This course is aimed to enable the candidate to acquire the knowledge of ethical code of professional practice ,its moral and legal aspect rule of IAP,WHO,& WCPT
	<b>Project work (non university exam)</b>	The student will be doing specific case studies allotted by their teacher/guide. Subject will be for Case Presentations and evaluations.
<b>BMLT</b>		
<b>BMLT 1 Year</b>	<b>Biochemistry</b>	Explain Biochemistry related to human. Understand about lab management. Understand about pH, buffer solution and dialysis. Perform urine analysis for sugar, protein bile pigment, ketone bodies. Understand about serum separation, collection and recording of specimen.
	<b>Microbiology</b>	Define and identify micro-organism. Understanding microscope Perform basic staining techniques Understand germ theory of disease, Koch postulate and abiogenesis. Able to prepare culture media Understand the virology and parasitology.
	<b>Basic Histology</b>	Explain the basic of histology. Understand fixation, staining and processing. Perform histological experiments.
	<b>Haematology</b>	Define blood and its components. Understand blood group identification.

		<p>Explain different blood tests.</p> <p>Understanding of normal value of blood components.</p> <p>Perform blood tests related with different diseases.</p> <p>Understand blood functioning.</p> <p>To know about blood collection , reporting, storage and transportation of samples.</p> <p>Describe anaemia.</p> <p>Describe buffer system</p>				
BMLT II Year	Analytical Biochemistry and Metabolism	<p>Explain Biochemistry related to human.</p> <p>Understand about lab management.</p> <p>Understand spectrophotometer and electrophoresis</p> <p>Perform ELISA</p> <p>Understand about serum separation, collection and recording of specimen.</p>				
		Microbiology	<p>Define and identify micro-organism.</p> <p>Understand the virology and parasitology.</p> <p>Understanding the pathogenic and non-pathogenic micro organism.</p> <p>Understand germ theory of disease, Koch postulate and abiogenesis.</p> <p>Perform basic microbiological test.</p> <p>Able to perform serological tests.</p>			
			Basic Cellular Pathology And Allied Techniques	<p>Explain the basic of histology.</p> <p>Understand fixation, staining and processing.</p> <p>Perform histological experiments.</p>		
				Haematology	<p>Define blood and its components.</p> <p>Understand blood group identification.</p> <p>Explain different blood tests.</p> <p>Understanding of normal value of blood components.</p> <p>Perform blood tests related with different diseases.</p> <p>Understand blood functioning.</p> <p>To know about blood collection , reporting, storage and transportation of samples.</p> <p>Describe anaemia.</p> <p>Describe buffer system</p>	
	Biochemistry		<p>Explain Biochemistry related to human.</p> <p>Understand about lab management.</p> <p>Understand about pH, buffer solution and dialysis.</p> <p>Perform urine analysis for sugar, protein bile pigment, ketone bodies.</p> <p>Perform glucose tolerance test</p>			
		Microbiology	<p>Define and identify micro-organism.</p> <p>Understanding the pathogenic and non-pathogenic micro organism.</p> <p>Perform basic microbiological test.</p> <p>Able to perform serological tests.</p> <p>Understand embryonated egg technique.</p> <p>Understand the virology and parasitology.</p>			
			Special Histology and Histochemical Methods		<p>Explain the basic of histology.</p> <p>Understand fixation, staining and processing.</p> <p>Perform histological experiments.</p>	
					Applied Haematology	<p>Define blood and its components.</p> <p>Understand blood group identification.</p> <p>To know about staining of bone marrow smears.</p> <p>Understanding of normal value of blood components.</p> <p>Perform blood tests related with different diseases.</p> <p>Explain leukemia</p> <p>Perform platelet function test</p> <p>Describe anaemia.</p> <p>Describe buffer system</p>
	<b>Pathology</b>					
	BXRT I Year	Anatomy and Physiology of Human Body – Part -I	<p>Explain Anatomy related to human.</p> <p>Understand about lab management.</p> <p>Understand about Physiology of human.</p> <p>Understanding of different anatomical position of human body.</p> <p>Understand about systems of human body.</p>			
			Radiographic Photography	<p>Define photographic latent image. Positive process.</p> <p>Understanding Light and radiation.</p> <p>Understand and analyze film materials in x-ray department. History, structure of an x-ray film, single sided films, types of film</p> <p>To demonstrate cassette design, care of cassettes, mounting of intensifying screens.</p> <p>To test to check light leakage in the cassette.</p> <p>To check the effect of safe light on exposed as well as unexposed X-ray film.</p>		
				Basic Radiological Physics		<p>Explain the Structure of matter and principles of machines.</p> <p>Understand Physics principles in design and working of x-ray tube technology.</p> <p>To understand measurement of tube current in milli and microamperes.</p> <p>Physical principles of radiation and optical field coverage and the factor affecting the field projected on patient during x-ray imaging and radiotherapy exponential and trigonometric functions used in radiological calculations</p>
						Radiation protection & Radiation Prology
		Anatomy and Physiology of Human Body – Part -II		<p>To understand types of cells, tissues, bones and joints.</p> <p>Understand about system and cavities of the body.</p>		
			<p>Understand about different system and organs of body.</p>			

BXRT II Year	Radiation Physics Including Radiation Protection	Define Atomic structure as applied to generation of x-rays and radioactivity spectrum of diagnostic imaging and therapy x-rays.
		Understanding the Laws of radioactivity and decay schemes of different alpha, beta, gamma ray, negatron and positron emitters as used in medicine especially in radiotherapy.
		To know factors used for treatment dose calculation method.
		To Know and apply physical aspects of electron and neutron beam therapy.
	Basic Radiographic Technique	Explain the radiography techniques for various anatomical position of body.
		Understand the radiography techniques for dental.
		Understand macro radiography.
	C.T. Imaging Techniques & MRI Imaging Techniques	Understand stereography.
		Understanding Basic Physics of CT & MRI.
Understand Basic Computer Operation, Positioning in CT & MRI.		
Understanding Basic data acquisition concepts, reformation and reconstruction of CT images and image archiving.		
To know Historical background, various generation of scanner, advancements in CT Technology.		
BXRT III Year	Radiotherapy Planning and quality control	To Perform MRI of Head & Neck, Thorax, Abdomen. Musculoskeletal system
		Definition of treatment planning.
		Understand Planning procedure in general with special emphasis on tumour localization and target volume measurement by conventional radiographic method and simulator imaging.
		Understand about Acceptance tests on therapy simulators.
	Equipment for Radio-diagnosis including newer Development and quality control	To Know Role of treatment, shall immobilization devices and laser in patients set up and positioning.
		To demonstrate computed tomography.
		Understanding Quality Assurance in Radio diagnosis.
	Radiography:- Techniques including special procedures	Understanding the concepts of Diagnostic Ultrasound.
		To perform digital radiography
Explain Radiological procedure pertaining to salivary glands, lacrimal system, bronchography, arthrography and hystero salpangiography.		
Understand Ventriculography and Encephalography.		
Digital Radiography	Understand Myelography and Angiography.	
	Understand Digital Radiography.	
	Explain Digital Radiography system.	
	To Understand Mammography System.	
DDT I Year	Anatomy & Physiology	To Understand Film archiving systems
		Explain Anatomy & Physiology related to human.
		Understand about lab management.
	Dialysis-1	Understand about dialysis.
		Helping and partaking in research work.
		Performing administrative task such as supervision of subordinates, preparation of reports and stock, and such.
		They work alongside doctors in providing the best health care service available to patients.
	Dialysis-2	Learning in related practices such as standard protocols, laboratory investigation, innovation system.
		Training to become professional medical technologists who can perform tasks such as testing documenting, investigation,
Helping and partaking in research work.		
Performing administrative task such as supervision of subordinates, preparation of reports and stock, and such.		
Dialysis-3	They work alongside doctors in providing the best health care service available to patients.	
	Learning in related practices such as standard protocols, laboratory investigation, innovation system.	
	Training to become professional medical technologists who can perform tasks such as testing documenting, investigation,	
	Helping and partaking in research work.	
DDT II Year	Anatomy & Physiology	Performing administrative task such as supervision of subordinates, preparation of reports and stock, and such.
		They work alongside doctors in providing the best health care service available to patients.
		Learning in related practices such as standard protocols, laboratory investigation, innovation system.
	Dialysis-1	Training to become professional medical technologists who can perform tasks such as testing documenting, investigation,
		Helping and partaking in research work.
		Performing administrative task such as supervision of subordinates, preparation of reports and stock, and such.
		They work alongside doctors in providing the best health care service available to patients.
	Dialysis-2	Learning in related practices such as standard protocols, laboratory investigation, innovation system.
		Training to become professional medical technologists who can perform tasks such as testing documenting, investigation,
Helping and partaking in research work.		
Performing administrative task such as supervision of subordinates, preparation of reports and stock, and such.		
Dialysis-3	They work alongside doctors in providing the best health care service available to patients.	
	Learning in related practices such as standard protocols, laboratory investigation, innovation system.	
	Training to become professional medical technologists who can perform tasks such as testing documenting, investigation,	
	Helping and partaking in research work.	
Biochemistry	Performing administrative task such as supervision of subordinates, preparation of reports and stock, and such.	
	They work alongside doctors in providing the best health care service available to patients.	
	Learning in related practices such as standard protocols, laboratory investigation, innovation system.	
	Training to become professional medical technologists who can perform tasks such as testing documenting, investigation,	
	Biochemistry related to human.	
Biochemistry	Understand about lab management.	
	Understand about pH, buffer solution and dialysis.	
	Perform urine analysis for sugar, protein bile pigment, ketone bodies.	
	Understand about serum separation, collection and recording of specimen.	
	The circulatory system (Heart & Blood Vessels)	



<b>DMLT I Year</b>	<b>Human Anatomy &amp; Physiology</b>	The Respiratory system
		The Digestive system Liver & Pancreas Lymphatic system Urinary system Reproductive system – Male & Female Endocrine system Central nervous system (Brain & Spinal cord)
		Understand germ theory of disease, Koch postulate and abiogenesis.
		Understand the virology and parasitology. Explain the basic of histology.
		Understand fixation, staining and processing.
	Perform histological experiments.	
	<b>Pathology – I : Haematology &amp; Blood Banking, Clinical Pathology &amp; Parasitology</b>	Define blood and its components.
		Understand blood group identification.
		Explain different blood tests.
		Understanding of normal value of blood components.
		Perform blood tests related with different diseases.
		Understand blood functioning.
		To know about blood collection , reporting, storage and transportation of samples.
		Describe anaemia.
Describe buffer system		
<b>BMLT I Year</b>	<b>Biochemistry</b>	Explain Biochemistry related to human.
		Understand about lab management.
		Understand about pH, buffer solution and dialysis.
		Perform urine analysis for sugar, protein bile pigment, ketone bodies.
		Understand about serum separation, collection and recording of specimen
	<b>Microbiology</b>	Define and identify micro-organism.
		Understanding microscope.
		Perform basic Staining technique.
		Able to prepare culture media.
		Understand germ theory of disease, Koch postulate and abiogenesis.
	Understand the virology and parasitology.	
	<b>Basic Histology</b>	Explain the basic of histology.
		Understand fixation, staining and processing.
		Perform histological experiments.
<b>Haematology</b>	Define blood and its components.	
	Understand blood group identification.	
	Explain different blood tests.	
	Understanding of normal value of blood components.	
	Perform blood tests related with different diseases.	
	Understand blood functioning.	
	To know about blood collection , reporting, storage and transportation of samples.	
	Describe anaemia.	
Describe buffer system		
<b>BMLT II Year</b>	<b>Analytical Biochemistry and Metabolism</b>	Explain Biochemistry related to human.
		Understand about lab management.
		Understand about spectrophotometer and electrophoresis.
		Understand Radio-immuno assay. Perform ELISA.
	<b>Microbiology</b>	Define and identify micro-organism.
		Understanding the pathogenic and non-pathogenic micro organism.
		Perform basic microbiological test.
		Able to perform serological tests. Understand the embryonated egg culture in clinical virology.
	<b>Basic Cellular Pathology And Allied Techniques</b>	Explain the various body tissue.
		Understand histological study of various system of the body.
		Understand fixation, staining and processing. Perform cytological experiments.
	<b>Haematology</b>	Define blood and its components.
		Understand blood group identification.
		Explain different blood tests.
Understanding of normal value of blood components.		
Perform blood tests related with different diseases.		
Understand screening of coagulation factors		
To know about staining of bone marrow smears		
Describe anaemia.		
Describe buffer system		
Explain clinical biochemical method.		

BMLT III Year	Biochemistry	Understand about lab management.
		Understand about pH, buffer solution and dialysis.
		Perform urine analysis for sugar, protein bile pigment, ketone bodies.
		Perform glucose tolerance test
	Microbiology	Define and identify micro-organism.
		Understanding the preservation of micro organism.
		Understanding the testing of disinfectants.
		Understand of Lab diagnosis of fungal infection.
		Able to perform serological tests.
		Understand toxin and antitoxin assay.
	Applied Histopathology	Understand the virology and parasitology.
		Explain the basic of histology.
		Understand fixation, staining and processing.
		Perform histological experiments.
		Explain neuropathology techniques.
		Understand cervical cytology.
	Applied Haematology	Understand immunopathology.
		Understand laboratory investigation for iron deficiency anaemia
		Explain Leukemia.
		Understanding cytochemical staining.
Perform platelet function tests.		
Describe megaloblastic anaemia.		
	Describe Radioisotops.	
<b>BA</b>		
B.A Ist Year	<b>Political Science Major</b>	Students will be understand the basic principles of political theory, Idiology, Diffrent approachesh . They will be able to explain concept of state and changing nature.They will be learn power and athourity andhow they on interwoven. They will
	<b>Political Science Minor</b>	Students will be understand the basic knowledge of constitution., . They will be able to explain concept of state and center relation , power and function of president of India , .They will be learn about centre and state legislation, exicutive, and
	<b>History Major</b>	To understand introduction of the pre historic period, proto historic period and introduction of the palacography,epigraphy, numismatics and relation of archacology with other subject. students will be understand the ancient civilizations of India like
	<b>History Minor</b>	students will get proper information about Ancient India Rites Educational System, Economic Condition, Gurukul tradition etc. To understand ancient India history in a holistic manner
	<b>Sociology Major</b>	students will be understand the basic composition of Indian society, Diffrent approachesh . They will be able to explain concept of three layers of Indian society namely Aranyak, Lok and Nagar.
	<b>Sociology Minor</b>	students will be understand the various employment opportunities in govt., corporate, NGO and self employment. . They will be able to explain concept Indian social institutions such as family , marriage, kinship and their role of solving many social problems.
	<b>Economics Major</b>	students will be understand the basic principles of microeconomics . They will be able to explain concept of consumer behaviour, production..They will be learn about market and price determination theory .
	<b>Economics Minor</b>	students will be understand the basic principles of Indian economics, . They will be able to familiar with the issues related to agriculture, industry, foreign trade and various economic problem of India.
	<b>Open Elective Political Science</b>	They will be able to explain the concepts of Indian political system
		They will be able to explain power and function of president
		They will be able to explain problem of Indian political system
	<b>Open Elective History</b>	They will be able to explain concepts of
	<b>Open Elective Sociology</b>	They will be able to explain concepts used in sociology, students will get infmation employment opportunities in the related to the discipline of sociology.
<b>Open Elective Economics</b>	students will be understand the basic principles of Indian economics, .	
	They will be able to familiar with the issues related to agriculture, industry, foreign trade and various economic problem of India.	
<b>Open Elective Communicative English</b>	Students to acquire the knowledge of phonology and morphology, syntax and structure, vocabulary and dicourse.	

		Students will be able to acquire literary sense and communicate effectively across the globe.
B.A IIInd Year	MACRO ECONOMICS	After completing this course. Student will be able to explain the difference between macroeconomics and microeconomics. <i>Government macroeconomic variables, National income and determination of output and employment in classical and</i>
	MONEY, BANKING AND PUBLIC FINANCE	1.Explain the quantity theory of money, determinants of money supply, the process of credit creation, credit control and other 2. Understand the issues like the role of the state, Provision of public goods, optimal design of tax and economic Policies. 3. Describe the role of public expenditure and effects of taxation and public debt in developing country.
	HISTORY OF MEDIEVAL INDIA (FROM 1206-1739 AD)	1. Present clear cut ideas about the consolidation of the Delhi Sultanate and contemporary Indian rulers. They will be able to 2. Debate and discuss on the reign of Akbar and the conflicts and struggles with the Rajputs and Marathas. They will be able to
	HISTORY OF MODERN INDIA (FROM 1740-1940 AD)	1. Understand in detail the colonial administration with all its salient features and the relations between the British and the 2. To have a clear view of the political condition and major events during the, last phase of the British rule in India. They will be able to 3. Prepare a short power point presentation of the Gandhian Era, highlighting the life and works of Gandhi. They will so be able to
	WESTERN POLITICAL THOUGHT	1. The students will understand the significance of study of Political Philosophy. 2. The students will know the key ideas of Greek Political thinkers Plato and Aristotle. 3. They will be able to explain what was the ideal state according to Plato and how was it linked to his scheme of education and theory of justice. 4. They will be able to answer how Aristotle differed from his master Plato on the conception of justice. 5. They will be able to answer why Machiavelli is called the child of his age. 6. They will be able to answer how and why Machiavelli gave an overriding priority to pragmatism above ethics and values in operation of statecraft. 7. They will be able to make a distinction among Hobbes, Locke, and Rousseau on the state of nature, the law of nature, nature and form of contract and the emergence of state from the contract. 8. Students would learn the key ideas of idealist thinkers. 9. Students would learn the key ideas in Marxism and will be able to answer the Socialist and communist tradition after Marx in Political ideas of Lenin and Laski.
	INDIAN POLITICAL THINKERS	1. Students will be able to think of Manu and Kautilya. 2. Students will be able to explain Social and Political Ideas of Raja Ram Mohan Roy, Swami Vivekananda, Lokmanya Bal Gangadhar Tilak, Shri Aurobindo Ghosh. 3. They will be able to explain the key ideas of Mahatma Gandhi, Jawaharlal Nehru, Subhas Chandra Bose and Dr. Bhimrao Ambedkar. 4. Students will be able to evaluate the ideas of M N.Roy, Ram Manohar Lohia, Jayaprakash Narayan and Pt. Deendayal Upadhyaya. 5. They will be able to understand the contribution of Women in Indian Political Thought.
	BASIC CONCEPTS OF SOCIAL RESEARCH	1. It will teach students about the importance of reality and the way to obtain objective and reliable information. 2. It will develop reading, writing and reasoning skills among the students. 3. This paper is designed to acquaint students with scientific ways of studying social phenomena. 4. The students well versed with this course will have many jobs opportunities in academic, fundamental and policy research projects undertaken both by the government and non-government agencies
	SOCIAL CHANGE AND DEVELOPMENT	1. This paper will introduce the students with the concept, various factors, processes and theories of social change. 2. It will also give them knowledge about the concept of development and its consequences. 3. The critical contributions would enable students to come out with understanding of policies and initiatives taken by the government, their implementation and resulting problems. 4. Students, well versed with this course are most likely to get job opportunities in various departments of planning and development, in NGOs which work as agencies of change and development and research institutes which deal with project and planning.
	STUDY OF PROSE	1. Analyze Literary devices, forms and techniques in order to appreciate and interpret the text. 2. Broaden analytical skills and develop critical thinking skills. 3. Cultivate wisdom and world-view within themselves 4. Develop language and communication skills and creativity.
	STUDY OF FICTION	1. Understand various aspects and forms of fiction 2. Trace the origin and development of English Novel 3. Appreciate Morality and humanity 4. Improve the understanding of the world and the complexities of human mind 5. Expand creativity and imagination and enrich the vocabulary in a delightful manner.
<b>POST GRADUATE COURSE OUTCOMES</b>		
<b>M.Sc. Computer Science</b>		
M.Sc. (CS) - I Semester	Programming Skills with C++	Describe the procedural and object oriented paradigm with concepts of classes, functions, data and object Understand dynamic memory management techniques using pointers, constructors, destructors, etc Describe the advance concepts of early and late binding, function overloading, operator overloading, virtual functions, exception handling, abstraction and polymorphism.
	Computer Organization & Architecture	Understand the organization of memory and memory management hardware. Explain the organization of basic computer, its design and the design of control unit. Elaborate advanced concepts of computer architecture, Parallel Processing, interprocessor communication and synchronization.
	Discrete Mathematics Structures	Simplify and examine simple common sense statements including compound statements, implications, inverses, converses, and contrapositives the usage of truth tables and the properties of logic. Practice rules of inference, checks for validity, and techniques of proof consisting of direct and indirect proof paperwork, proof by contradiction, proof by instances, and mathematical induction and write proofs using symbolic common sense and Boolean Algebra.
	Office tools	To perform presentation skills To perform documentation To perform accounting operations To perform presentation skills
M.Sc. (CS) - II Semester	Data Structures & Algorithms	Apply algorithms, flowcharts and applications of graphs and trees to simplify real time problems. To understand the abstract data types stack, queue, deque, and list.
	Advanced Computer Networks	Identify information security goals, classical encryption techniques. Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication

		demonstrate expertise in configuring host and network level technical security controls, to include host firewalls, user access controls, host logging.
	<b>Advanced RDBMS</b>	Describe DBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models. Learn and apply Structured Query Language (SQL) for database definition and database manipulation.
	<b>Information Storage Management</b>	To Understand the Concept of Information Storage and Data centre Environment. To Know and understand Intelligent Storage System
<b>M.Sc.(CS) - III Semester</b>	<b>Linux &amp; Shell Programming</b>	The course comprises the basic general purpose commands of Unix. It discusses the applications and modification of the ownership and file permissions through advance Unix commands.
	<b>Compiler Design</b>	The course develop an understanding in students for the fundamental and advance features of Compiler Design. It comprises lexical rules and grammars for a programming language to design a compiler.
	<b>Programming Skills with JAVA</b>	To inculcate advance knowledge of Java Programming concepts with GUI features Knowledge of creating java applications and applet programs that solve simple business problems.
	<b>Data Warehousing &amp; Mining</b>	The course describes the fundamental and advance concepts and applications of data warehousing. It helps students to design a data warehouse and develop skills to handle the problems arises during implementation of a data
<b>M.Sc.(CS) - IV Semester</b>	<b>Big Data Analytics</b>	Understand Big Data primitives Understand different mathematical models for Big Data Understand needs, challenges and techniques for big data visualization using different tools and implement visualization using one of the tools Understand the applications & impact of big data technologies
	<b>Multimedia &amp; Computer Graphics</b>	Discuss various applications of multimedia tools and the methods to implement them. State the properties of different media streams; compare and contrast different multicast protocols
	<b>PHP &amp; MySQL</b>	Understand the creation of static webpage using HTML Understand the principles behind using MySQL as a backend DBMS with PHP Understand the function of JavaScript as a dynamic webpage creating tool
	<b>Enterprise Resource Planning</b>	Understand the basic concepts of ERP. Identify different technologies used in ERP. Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules. Understand and implement the ERP life cycle.
<b>M.Sc. Mathematics</b>		
<b>M.Sc. (Maths) - I Semester</b>	<b>Topology-I</b>	To present an introduction to the field of topology, with emphasis on those aspects of the subject that are basic to higher mathematics. To introduce the student to what it means to do mathematics, as opposed to learning about mathematics or to learning to do computational exercises To help the student learn how to write mathematical text according to the standards of the profession.
	<b>Complex Analysis-I</b>	To understand the modulus of a Complex valued function and results regarding and develop manipulation skills in the use of Rouche's theorem. To Understand certain theorems like Inverse Function theorem, Hardmards three circle theorem ZZ, the principal of Analytic Continuation and the concerned results and learn to use Argument Principle.
	<b>Advanced Abstract Algebra-I</b>	This course aims to provide a first approach to the subject of abstract algebra, which is one of the basic pillars of modern mathematics. This course, the student will understand and be able to apply the fundamental principles of abstract algebra, Use mathematically correct terminology and notation Construct correct direct and indirect proofs Use division into cases in a proof Use counter examples. Apply logical reasoning to solve a variety of problems.
	<b>Real Analysis-I</b>	This course introduces students to the foundations of modern mathematical analysis, reinforcing the concepts of convergence We introduce some powerful new concepts such as compactness, uniform convergence and contraction mappings, which, as an illustrative application, we use to prove well-posedness of initial value problems for ODEs
<b>M.Sc.(Maths) II Semester</b>	<b>Topology-II</b>	This course is designed to provide the student with an intense foundation in fundamental concepts of point-set topology. Topology of Metric Spaces, Moore Spaces, Tychonoff spaces, and Hausdorff spaces. We shall become familiar with separability, completeness, connectedness, compactness, density,
	<b>Complex Analysis-II</b>	To understand the factorization of entire functions having infinite zeros. To study the functions with positive real part To understand Gamma and Zeta functions, their properties and relationships To understand and learn to use Argument Principle. To understand the Harmonic functions on a disc and concerned results.
	<b>Advanced Abstract Algebra-II</b>	This course, the student will understand and be able to apply the fundamental principles of abstract algebra. Abstract algebra gives to student a good mathematical maturity and enables to build mathematical thinking and skill. this course, the student will understand and be able to apply the fundamental principles of
	<b>Advanced Discrete Mathematics-II</b>	Introduce concepts of mathematical logic for analyzing propositions and proving theorems Use sets for solving applied problems, and use the properties of set operations algebraically. Work with relations and investigate their properties. Investigate functions as relations and their properties. Introduce basic concepts of graphs, digraphs and trees
	<b>Lebesgue Measure and Integral-II</b>	This course is an introduction to the integral and differential calculus of measures. It is required to learn functional analysis and provides the foundation for probability theory Good understanding of basic real analysis and topology is required Graduate students in engineering departments who wish to learn probability theory in depth may also want to credit this course
<b>M.Sc.(Maths)- III Semester</b>	<b>Functional Analysis-I</b>	To study certain topological-algebraical structures and the methods by which the knowledge of these methods can be applied to analytic problems.. The objectives of the course is the study of the main properties of bounded operators between Banach and Hilbert spaces, the basic results associated to different types of convergences in normed spaces and the spectral theorem and some of its applications.
	<b>Advanced Graph Theory-I</b>	To understand and apply the fundamental concepts in graph theory To apply graph theory based tools in solving practical problems To improve the proof writing skills
	<b>Integral Transform-I</b>	Student will gain a clear intuitive understanding of the concept of partial differential equation and its relevance to describing physical phenomena such as diffusion and wave propagation. Abstract algebra gives to student a good mathematical maturity and enables to build mathematical thinking and skill. Students will gain deeper understanding of the Fourier series by mastering the theory of boundary value problems. Students will learn the separation of variables method to solve linear parabolic, elliptic and hyperbolic partial differential equations.

		Students will gain practical knowledge of the numerical techniques for solving partial differential equations Students will learn the basics of the spectral Fourier transform method for solving PDEs on an infinite or semi-infinite domain.
	<b>Operations Research-I</b>	To impart knowledge in concepts and tools of Operations Research To understand mathematical models used in Operations Research Work with relations and investigate their properties.
	<b>Partial Differential Equation-I</b>	The course includes initial and boundary value problems for PDEs of first and second order, and includes, to a limited extent, systems of such equations. Emphasis is on the qualitative behaviour of solutions.
<b>M.Sc.(Maths)-IV Semester</b>	<b>Functional Analysis-II</b>	This course will cover the foundations of functional analysis in the context of normed linear spaces The Big Theorems (Hahn-Banach, Baire Category, Uniform Boundedness, Open Mapping and Closed Graph) will be presented and several applications will be analysed.  The important notion of duality will be developed in Banach and Hilbert spaces and an introduction to spectral theory for compact operators will be given.
	<b>Advanced Graph Theory-II</b>	To understand how graph theory have been, the concept of vertex connectivity and edge connectivity in graphs,concept of digraphs, Euler digraphs and Hamiltonian digraphs, Koenigsberg Seven Bridge Problem and to develop the under-standing of Geometric duals in Planar Graphs. To understand the concept of matrices in graphs like Incidence matrix, Adjacency matrix,Cycle matrix etc
	<b>Integral Transform-II</b>	The Objective for the course are to gain a facility with using the transform, both specific techniques and general principles, and learning to recognize when, why, and how it is used.  The course is aimed at exposing the students to learn the Laplace transforms and Fourier transforms. To equip with the methods of finding Laplace transform and Fourier Transforms of different functions. To make them familiar with the methods of solving differential equations, partial differential equations, IVP and BVP using Laplace transforms and Fourier transforms. Students will learn the separation of variables method to solve linear parabolic, elliptic and hyperbolic partial differential equations.
	<b>Operations Research-II</b>	Operations Research (OR) is a field in which people use mathematical and engineering methods to study optimization problems in Business and Management, Economics, Computer Science, Civil Engineering, Electrical Engineering, etc. The series of courses consists of three parts, we focus on deterministic optimization techniques, which is a major part of the field of OR. As the third part of the series, we study mathematical properties of linear programs, integer programs, and
	<b>Partial Differential Equation-II</b>	Explains the notion of partial differential equations,the meaning of solution of a partial differential equation,the meaning of solution of a partial differential equation. Solves first-order partial differential equationS,semi-linear partial differential equations by Lagrange method, nonlinear first order partial differential equations by Charpit method,special-types of first-order partial differential equations. Finds solution of higher-order linear partial differential equations,solves the nonhomogeneous linear partial differential equations with constant coefficients,Euler equations.defines canonical forms of second order partial differential equations
	<b>M.Sc. Physics</b>	
<b>M.Sc. (Physics)-I Semester</b>	<b>Mathematical Physics</b>	Students would be able to understand the mathematical methods essential for solving the advanced problems in physics. It would be helpful in the development of the ability to apply the mathematical concepts and techniques to solve the problems in theoretical and experimental physics. The knowledge of mathematical physics would be beneficial in further research and development as it serve as a tool in almost every branch of science and engineering.
	<b>Classical Mechanics</b>	In this course students would learn to apply the Newtonian laws using various mathematical formulations to describe the motions of macroscopic objects using generalized coordinates, momentum, forces and energy The classical mechanics would be helpful in understanding of advanced branches of modern physics.
	<b>Quantum Mechanics</b>	The course provides an understanding of the behaviour of the systems at microscopic (atomic and nuclear) scale and even smaller. Students would learn basic postulates and formulations of quantum Mechanics. The course, in fact, plays an important role in explaining the behaviour of all physical systems in the universe. The course includes the study of a brief review of foundations of quantum mechanics, matrix formulation of quantum mechanics, symmetry in quantum mechanics and approximation methods for bound states.
	<b>Electronic Devices</b>	This course helps the students to gain basic ideas of the construction and working of electronic devices and circuits and to understand the fundamentals of communication systems. The course includes the study of number systems, Boolean algebra, logic gates, combinational circuits, sequential circuits, memory devices and IC technology. The course is of much practical purpose for the students to learn basics of digital electronics. The digital electronics has wide applications in computing, process control, signal processing, communication systems, digital instruments etc.
<b>M.Sc.(Physics) II Semester</b>	<b>Quantum Mechanics-II</b>	The course includes the study of scattering theory, identical particles, relativistic wave equations and quantization of wave fields. The course would describe the nature and behaviour of matter and energy at subatomic level In particular, theory of scattering gives an understanding collision between a quantum mechanical particle and target. The study of relativistic quantum mechanics enables the students to understand the behaviour of objects moving with speeds comparable to that of light
	<b>Statistical Mechanics</b>	The course includes the study of Basic postulates, application of classical distribution to ideal gases, imperfect gases, quantum statistics and black body radiation. The course is helpful for the students to understand the dynamics of the bulk material in macroscopic as well as microscopic levels. It is also useful to understand the relation between microscopic and macroscopic systems. Understand how statistics of the microscopic world can be
	<b>Electrodynamics and Plasma Physics</b>	The study of electromagnetic theory provides basic foundation for the students to understand advanced courses of physics. The course involves the study of electromagnetic theory, Maxwell's equations and electromagnetic waves, radiations from moving charges. In this study involves various basic plasma equations starting from basic set of fluid and Maxwell equations and solid conceptual understanding and theory behind several key basic plasma phenomena, such as magnetic reconnection, magnetohydrodynamic stability and plasma instabilities.
	<b>Atomic and Molecular Physics</b>	The course structure includes atomic and molecular spectroscopy. As per the course structure, the students learn basics concepts of spectroscopic principles and rules. Students would learn technique in spectroscopy and know about their applications.
<b>M.Sc.(Physics)- III Semester</b>	<b>Condensed Matter Physics I</b>	The course includes the study of crystal structure,elastic properties of solid, lattice vibration and phonons, Thermal properties and band theory of solids. This course is of immense importance for the students seeking R & D opportunities in the field of theoretical condensed matter physics, material science, device fabrication, nanoscience and nanotechnology etc
	<b>Nuclear and Particle</b>	In this course students would know about the general properties of nuclei, nuclear forces and detectors, radioactive decay and nuclear reactions. The course expands the knowledge of students especially, the various applications of nuclear physics The course builds a foundation for the students to carry out research in the field of nuclear physics, high energy physics, nuclear astrophysics, nuclear reactions and applied nuclear physics.

		The course is important for the students to learn about the most fundamental building blocks of matter and radiation, interaction among elementary particles and hence to understand their behaviour.
	<b>Digital Electronics</b>	The course includes the study of number systems, Boolean algebra, logic gates, combinational circuits, sequential circuits, memory devices and IC technology. The course is of much practical purpose for the students to learn basics of digital electronics. The digital electronics has wide applications in computing, process control, signal processing, communication systems, digital instruments etc. This course helps the students to gain basic ideas of the construction and working of electronic devices and circuits
	<b>Atomic and Molecular Physics</b>	Describe the atomic spectra of one and two valence electron atoms. Explain the change in behavior of atoms in external applied electric and magnetic field. Explain rotational, vibrational, electronic and Raman spectra of molecules. Describe electron spin and nuclear magnetic resonance spectroscopy and their applications
<b>M.Sc.(Physics)-IV Semester</b>	<b>Condensed Matter Physics -II</b>	The course gives in depth understanding of condensed matter physics, including Dielectric and Ferroelectric, Piezoelectric properties, superconductivity, nanomaterials and nanoscience and technology. The students have the opportunity to use the basic principles of condensed matter physics in frontier areas of research and development in the field of material science, nanoscience and nanotechnology.
	<b>Laser Physics</b>	The students would learn about various optical sources and devices including lasers photo diodes, LED and applications. They would also have the understanding of optical fiber optics, different types of optical fibers, optical communication systems, digital modulation, optical fibers and importance of fiber optical communication in modern world.
	<b>Computer Programming and informatics</b>	The course provides an opportunity to the students to learn about the fundamentals of computer applications in solving the problems in different branches of Physics and Mathematics. They would learn basics of C-programming and FORTRAN-90/95 programming languages and their applications which can be useful in their future carrier in the field of research and technology.
	<b>Optional paper</b>	(1) <b>Computer Architecture, Networking &amp; Assembly Language Programming:</b> Explain the organization of basic computer, its design and the design of control unit. Understand the organization of memory and memory management hardware, Microprocessor Architecture, Assembly language programming. (2) <b>Material Science:</b> In this course the students learn about classification of materials, phase transition, Diffusion in materials, elastic and Anelastic behaviour and transport properties of solids. (3) <b>Environmental Physics:</b> Ability to demonstrate comprehensive understanding of the environment, environmental processes, theories and ethics. Ability to describe the mechanisms of interactions between different spheres of environment. Ability to recognize and describe how about resource management and sustainability. (4) <b>Communication Electronics:</b> The students would learn about communication electronics, Propagation of wave, microwave, Digital communication and data Transmission. (5) <b>Digital Electronics:</b> In this course students would learn about op-Amp and its application, Microprocessors and Micro Computers and Microprocessors programming.
<b>M.Sc. Biotechnology</b>		
<b>M. Sc. I Sem Biotechnology</b>	<b>Cell Biology</b>	Understand Origin of life and development of cell theory Learn about the structural and functional organization of cell membrane and ionic transport Discuss about the structure and functions of cell organelles Understand the concepts of cell cycle and cell signalling Discuss cell cycle and cell motility
	<b>Structure, Function and Metabolism of Biomolecules</b>	Get knowledge of application and scope of Biochemistry Understand structure and function of proteins Discuss Function and properties of Carbohydrates Discuss Function and properties of lipids and fats. Discuss Function and properties of Nucleic acid. Understand metabolisms of biomolecules.
	<b>BT-103: General and Applied Microbiology</b>	Understand the general concept of microbiology Discuss the classification of bacteria Learn virus structure and classification Perform different methods of control of microorganisms by physical and chemical methods Discuss microbial ecology and microbial growth system Discuss various techniques of microscopy and centrifugation
	<b>Analytical Techniques in Biotechnology</b>	Perform chromatographic analysis using different chromatographic techniques Gain knowledge of electrophoretic techniques Discuss various methods of radioisotopic techniques Learn various spectroscopic techniques
<b>M. Sc. II Sem Biotechnology</b>	<b>Molecular Genetics</b>	Discuss history and scope of genetics. Understand various laws of Mendel's. Learn gene transfer mechanism in microorganisms. Discuss mutation and their molecular mechanisms. Understand classical and molecular concept of gene. Understand lytic and lysogeny cycle.
	<b>Basic Enzymology and Enzyme Technology</b>	Understand the basic concept of nomenclature and enzyme classification. Learn enzyme kinetics. Discuss about various factors affecting enzyme activity and catalysis. Discuss the structure and function of enzyme. Perform immobilization techniques.
	<b>Molecular Biology</b>	Understand the basic concept of nucleic acid and their base composition. Learn different models of DNA replication. Understand the mechanism of transcription and translation. Discuss regulation of gene expression in prokaryotes and eukaryotes.
	<b>Immunology and Animal Cell Culture</b>	Understand the basic concept of immunology. Discuss complement system and immunological responses. Discuss concept of autoimmunity. Perform animal cell culture techniques. Gain knowledge of specialized techniques like cell immobilization, amniocentesis, FISH etc.
<b>M. Sc. III Sem Biotechnology</b>	<b>Genetic Engineering</b>	Discuss concept of genetic engineering. Understand various cloning and expression vectors. Discuss various sequencing methods. Learn molecular probes and PCR. Discuss various molecular markers and DNA chip technology.
	<b>Biostatistics and Bioinformatics</b>	Perform various biostatistics methods. Understand the concept of probability. Discuss bioinformatics tools and techniques.

		Study sequence comparison and structural bioinformatics tools.
	<b>Plant Biotechnology</b>	Study the concept of Plant Tissue culture methods. Understand protoplast culture techniques. Discuss plant cloning vectors. Study about biological nitrogen fixation and bio fertilizers. Understand the concept of transgenic plants and their commercial status.
	<b>Bioprocess and Biochemical Engineering</b>	Study about the basic concept of bioprocess engineering. Learn various methods of sterilization. Discuss about the measurement and control of bioprocess parameters. Understand the downstream process for the recovery of products. Learn the energy balance in bioprocess system.
	<b>Applied Biotechnology</b>	Study about microbial strains of industrial importance and their products Discuss role of biofertilizers and biopesticides Understand the method of production of prokaryotic and eukaryotic based fermented products Study the role of biotechnology in solving environmental problems such as pollution, water treatment, waste management etc
		Understand the concept of human cloning , ethical issues and risk associated with it.
<b>M. Sc. IV Sem Biotechnology</b>	<b>Advances in Fermentation and food Biotechnology</b>	Study the role of fermentation and validation of fermentation process. Discuss the role of industrially important microorganisms for food applications. Discuss the types of food spoilages and methods of food preservation. Learn about the metabolic activity of microorganisms and their influence on product attributes. Discuss various strategies and approaches of protein engineering in food technology.
	<b>Applied immunology and Immunodiagnosics</b>	Discuss various immunodiagnostic techniques for disease diagnosis. Learn the principle and application of immunohistochemistry and immunoblotting techniques. Study the culture maintenance and application of lymphocyte culture. Discuss about autoimmune diseases and cancer.
	<b>Principles of Drug designing</b>	Understand drug discovery and management. Discuss quantitative structure activity relationship. Study thermodynamics and structural principals of lead compounds. Learn the concept of stereochemistry and drug designing. Study the concept of molecular modelling and drug receptors.
	<b>Training Survey/ Visit/ Dissertation/ Project work</b>	Practical handling of instruments Develop research aptitude and ethics. Develop research paper/thesis writing skills. Get the exposure of research lab and their working strategies. Perform individual research and analyse their outcomes.
<b>M.Sc. (Microbiology)</b>		
<b>M. Sc. I Sem Microbiology</b>	<b>General Microbiology</b>	Origin of life and development of cell theory Learn about the structural and functional organization of cell membrane and ionic transport Discuss about the structure and functions of cell organelles Understand the concepts of cell cycle and cell signalling Discuss cell cycle and cell motility
	<b>Microbial Biochemistry</b>	Get knowledge of application and scope of Biochemistry Understand structure and function of proteins Discuss Function and properties of Carbohydrate Discuss Function and properties of lipids and fats. Discuss Function and properties of Nucleic acid. Understand metabolisms of biomolecules.
	<b>Microbial Genetics</b>	Understand the concept of genetics in microbiology Discuss the concepts of DNA, RNA in microbes Perform different methods of genetically control of microorganisms
	<b>Biostatistics, Instrumentation Bioinformatics</b>	Understand the concept of mathematics microbiology Discuss the instruments used in microbiology Perform different methods of control of microorganisms by physical and chemical methods Discuss the new concepts of information technology and computer applications in microbiology
<b>M. Sc. II Sem Microbiology</b>	<b>Molecular biology &amp; Genetic Engineering</b>	Understand the basic concept of nucleic acid and their base composition. Learn different models of DNA replication. Understand the mechanism of transcription and translation. Discuss regulation of gene expression in prokaryotes and eukaryotes.
	<b>Microbial Metabolism</b>	Get knowledge of application of Biochemistry Understand metabolism of proteins Understand metabolism of Carbohydrate Understand metabolism of lipids and fats. Understand metabolism of Nucleic acid. Understand metabolisms of biomolecules.
	<b>Food Microbiology</b>	Learn metabolism of microbes including respiration etc. Discuss various integrated pest management and microbial diseases. Learn production methods of microbial bio products. Discuss methods for food preservation and adulteration.
	<b>Industrial Microbiology</b>	Discuss soil profile, rhizospheric conditions for microbes. Studied about genetic manipulations of agricultural plants. Discuss various integrated pest management and microbial diseases. Learn production methods of microbial bio products. Discuss methods for food preservation and adulteration.
<b>M. Sc. III Sem Microbiology</b>	<b>Immunology &amp; Immunodiagnosis</b>	Understand the concept of Infection, their sources Understand various types of immunity Discuss various technique used in antigen antibody reactions Discuss various molecular markers and artificial immunity
	<b>Environmental Microbiology</b>	Understand various microbes of different environment Understand the concept of assessment of quality of water. Discuss Microbial degradation of organic compounds Study Bioremediation and bio mining.
	<b>Agricultural Microbiology</b>	Discuss soil profile, rhizospheric conditions for microbes. Studied about genetic manipulations of agricultural plants. Discuss various integrated pest management and microbial diseases. Learn production methods of microbial bio products.

	<b>Medical Microbiology and Parasitology</b>	<p>Study about the history of pathogenic Microorganism.</p> <p>Learn various staphylococcal infections and their causing organisms.</p> <p>Discuss about candidiasis group infections.</p> <p>Understand the viral pathogens.</p> <p>Learn the tropical diseases like malaria, Kalazar etc.</p>
<b>M. Sc. IV Sem Microbiology</b>	<b>Microbial Diversity</b>	<p>Study the role genes for differences in microbes.</p> <p>Study the classification of microbes.</p> <p>Learn the methods for finding diversity.</p> <p>Understand the classification of extremophiles.</p>
		<p>Discuss various methods to get taxonomical details using bio-informatics.</p>
		<p>Discuss various Molecular techniques like PCR, Blotting etc.</p> <p>Learn the principle and application of Animal cell culture.</p> <p>Study the culture maintenance and application of lymphocyte culture.</p> <p>Discuss about autoimmune diseases and cancer.</p>
	<b>Advance Techniques and good microbial practices</b>	<p>Practical handling of instruments</p> <p>Develop research aptitude and ethics.</p> <p>Develop research paper/thesis writing skills.</p> <p>Get the exposure of research lab and their working strategies.</p> <p>Perform individual research and analyse their outcomes.</p>
<b>M.Sc. Botany</b>		
<b>M.Sc. I Sem Botany</b>	<b>Biology and Diversity of Virus, Bacteria and Fungi</b>	<p>To develop the skill of staining and observation of Micro- organisms like gram positive / gram negative bacteria.</p> <p>To understand the use of binocular microscopes</p> <p>To impart the skills of temporary and permanent slide preparations.</p> <p>To enhance ability to identify and classify the fungal group using microscope.</p> <p>To familiarize the students with plant diseases and their causative agents.</p> <p>To differentiate the characters of prokaryotes &amp; eukaryotes.</p>
		<p>Students will understand Care and use of microscopes;</p> <p>Students will understand the basic concepts of algal biology and ecology and how they apply to different aquatic environments, Algal Pigments</p> <p>Students will be familiar with the role of algae in critical environmental issues, such as eutrophication, human health and global climate change.</p> <p>Students will be familiar with some of the basic applications of algae in biotechnology, such as the production of food, chemicals and biofuels</p>
		<p>To impart the skills of temporary and permanent slide preparations.</p> <p>To become familiar with basic classification, morphology, reproduction, life history of bryophytes and pteridophytes.</p> <p>To make students familiar with distribution, origin, evolution and affinities of bryophytes.</p> <p>To become familiar with ecology and economic importance of bryophytes and pteridophytes.</p> <p>To make aware about about fossilization process and geological time scale.</p>
		<p>Students will understand plant identification key</p> <p>To introduce plant nomenclature and classification.</p> <p>To become familiar with basic plant morphology.</p> <p>To begin to identify plants using morphological characteristics.</p> <p>To become familiar with the staining procedure of gymnosperms</p> <p>To apply practical skill for preparing permanent slides.</p> <p>To become familiar with gymnospermic plant morphology.</p> <p>To understand type of fossils of gymnosperms.</p>
	<b>Biology and Diversity of Algae</b>	
	<b>Biology and Diversity of Bryophytes and Pteridophytes.</b>	
<b>Biology and Diversity of Gymnosperm</b>		
<b>M.Sc. II Sem Botany</b>	<b>Cell Biology and Genetics</b>	<p>Students will understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles</p> <p>Students will understand how these cellular components are used to generate and utilize energy in cells</p> <p>Students will understand the cellular components underlying mitotic and meiotic cell division.</p> <p>Students will apply their knowledge of cell biology to selected examples of changes or losses in cell function. These can include responses to environmental or physiological changes, or alterations of cell function brought about by mutation.</p> <p>Students will learn the basic principles of inheritance at the molecular, cellular and organismal levels.</p> <p>Students will understand causal relationships between molecule/cell level phenomena.</p> <p>Students will test and deepen their mastery of genetics by applying this knowledge in a variety of problem-solving situations.</p>
		<p>Students will understand the organisation of higher plant body</p> <p>Students will understand the development of shoot and root</p> <p>Students will understand the development of flower including the male and female reproductive features</p> <p>Students will understand the Reproduction including pollination, fertilization, and embryogenesis</p>
		<p>Students will understand plant water relation</p> <p>Students will be acquainted with phytohormones, signalling process and their physiological effects</p> <p>Students will understand the floral induction and developmental processes</p> <p>Students will understand the Stress physiology</p>
		<p>Students will understand division of plant ecology</p> <p>Students will be acquainted with the knowledge of community organization</p> <p>Students will understand the ecosystem development and stability</p> <p>Students will understand the various ecosystem components in the cycling of nutrients, fate of energy and flow in the ecosystem</p> <p>Students will understand the major biomes and soil type of the world</p>
	<b>Plant Development and Reproduction</b>	
	<b>Plant Physiology- I</b>	
	<b>Plant Ecology-I</b>	
<b>M.Sc. III Sem Botany</b>	<b>Systematics of Angiosperms</b>	<p>Plant systematic is the study of flowering plant diversity. Through the lectures, laboratory exercises, walks and readings students learn:</p> <p>How to describe and classify plant diversity.</p> <p>The major features and evolutionary origins of vascular plants.</p> <p>Identification of plants using dichotomous keys.</p> <p>Recognition of important angiosperm families</p> <p>Gain some knowledge of the local spring flora</p>
		<p>Cell organization,</p> <p>DNA replication, transcription, protein synthesis and enzymology, selected topics in molecular genetics including DNA recombination as well as gene structure, function and regulation.</p> <p>Understand how molecular machines are constructed and regulated so that they can accurately copy, repair, and interpret genomic information.</p> <p>Appreciate that molecular biology is a dynamic and ever-changing experimental science.</p> <p>Given a particular biological question, identify which experimental techniques are best used to answer that question.</p>
	<b>Molecular Biology and Plant Breeding</b>	



		<p>Molecular tools for studying genes and gene activity.</p> <p>Show deeper understanding and theoretical knowledge of current immunological problems - Present and discuss immunological problems.</p> <p>Allergies and allergens</p> <p>ELISA</p>
	<b>Plant Physiology</b>	<p>Observe evidence of photosynthesis in a water plant.</p> <p>Students will understand the assemble and working of Instruments i.e. willmott bubler, Ganongs Respirometer, Spectrophotometer, colorimeter.</p> <p>To understand the importance of the relationship of structure to enzyme function.</p> <p>To be familiar with how enzymatic reactions are influenced by changes in: Enzyme concentration, Substrate concentration, pH, Temperature, Inhibitor (CuSO<sub>4</sub>)</p> <p>Describe the nitrogen cycle and how it is affected by human activity</p> <p>Differentiate among the types of plant hormones and Analyze the different types of plant responses.</p>
	<b>Plant Ecology- II (Conservation and Utilization of Plant Resources)</b>	<p>To enable the students to understand the plant in relation to environmental factors.</p> <p>To develop the knowledge of different types of vegetation of India and world.</p> <p>To familiarize the student with conservation practices.</p> <p>To developed the skills of quality analysis of natural resources (soil, air and water).</p> <p>To impart the skills of statistical data analysis of plant diversity.</p> <p>To familiarize the student with economic importance of plants.</p> <p>Survey of locally available plants</p>
<b>M.Sc. IV Sem Botany</b>	<b>Biotechnology and Tissue Culture</b>	<p>Students will understand history, Scope and Concepts in plant tissue culture</p> <p>Students will understand the sterilization techniques</p> <p>To familiarize the student with types of culture medium and their sterilization</p> <p>Students will understand the effect of growth hormone on tissue culture</p> <p>Students will perform the techniques of organogenesis</p> <p>Students will perform the techniques of micropropagation, embryogenesis, androgenesis</p> <p>To familiarize the student with types of culture medium and their sterilization</p> <p>Students will understand the growth charecteristics of E.coli bacteria</p> <p>Students will understand the isolation of DNA and its quatitation</p> <p>Students will understand the effects of antibiotics on growth of microorganism</p> <p>Plant systematic is the study of flowering plant diversity. Through the lectures, laboratory exercises, walks and readings students learn:</p>
	<b>Applied Botany and Instrumentation</b>	<p>Student will learn the history and relevance of herbal drugs in Indian system of medicine</p> <p>Students will Understand the extraction techniques for Phytochemical investigations, standardization and applied aspect of herbal drug</p> <p>Student learn the aromatherapy and their applied aspects</p> <p>Students will understand the importance of Organic farming, Vermiculture, floriculture and mushroom cultivation techniques – career and occupational opportunities</p> <p>Student will learn the working principal and application varios bioinstruments i.e. microscope, colorimeter, spectrophotometer etc.</p> <p>Student will learn the usage of Computer in biology</p>
	<b>Elective Paper III: Environmental Science</b>	<p>Students will understand the Global climate distribution</p> <p>Student will Green house effect, acid rain and ozone depletion Study the importance of monitoring and assessment of environment</p> <p>Students will understand Environmental toxicology</p> <p>Recognise the need of environmental protection acts and laws</p> <p>Study the organizations involved in environmental protection</p>
	<b>Elective Paper IV: Pollution Ecology</b>	<p>Study the pollution status and concerns</p> <p>Study the various types of pollution i.e. Air, Water, Soil</p> <p>Study the Pollution monitoring and control</p>
<b>M.Sc. Zoology</b>		
<b>M. Sc. Zoology I Sem</b>	<b>Biosystematics, Taxonomy and Evolution</b>	<p>Understand the concept of International code of zoological Nomenclature</p> <p>Learn about the basic concept of biosystematics taxonomy</p> <p>Discuss about theories of organic evolution.</p> <p>Understand the concepts of molecular population genetics.</p> <p>Learn the evaluation of biodiversity indices.</p>
	<b>Structure and Function of Invertebrates</b>	<p>Get knowledge of origin of metazoan.</p> <p>Understand the patterns of feeding in Invertebrates</p> <p>Discuss Function and properties of Carbohydrate</p> <p>Discuss the process of excretion in lower as well as higher Invertebrates.</p> <p>Understand the different Invertebrate larval forms.</p>
	<b>Quantitative Biology, Biodiversity and Wild Life</b>	<p>Understand the basic concept of Biostatistics and its applications.</p> <p>Perform probability calculations and sampling methods.</p> <p>Understand the principal of biodiversity.</p> <p>Understand the medicinal uses of medicinal plant.</p> <p>Understand the importance of wild life conservation.</p>
	<b>Biomolecules and Structural Biology</b>	<p>Discuss regulation of gene expression in prokaryotes and Eukaryotes.</p> <p>Studied about molecular biology</p> <p>Get knowledge of DNA replication</p> <p>Discuss about protein synthesis.</p>
<b>M. Sc. Zoology II Sem</b>	<b>General and Comparative animal Physiology and Endocrinology</b>	<p>Understand the Comparative physiology of digestion.</p> <p>Learn the comparative study of mechanoreception , photoreception, chemoreception.</p> <p>Discuss the mechanism of hormone action.</p>

		Learn the phylogeny and Ontogeny of Endocrine glands.
	<b>Population Ecology and Environmental Physiology</b>	Get knowledge of Demography. Understand the Eco-Physiological adaptation of terrestrial, marine and fresh water environment. Get knowledge of environmental pollution and human health. Understand the concept of homeostasis.
	<b>Tools and Techniques in Biology</b>	Learn practical application of microscopy and centrifugation techniques. Discuss principle and applications of spectroscopy. Perform chromatography Understand the basic concept of nucleic acid and their base composition. Learn different models of DNA replication. Understand the mechanism of transcription and translation.
	<b>Molecular Cell Biology and Genetics</b>	Understand the cell signalling Understand the concept of sex determination Get knowledge of Genetic disease and genome. Gain knowledge of specialized techniques like cell immobilization, amniocentesis, FISH etc.
<b>M. Sc. Zoology III Sem</b>	<b>Comparative Anatomy of Vertebrates</b>	Understand the origin of chordate. Learn evolution of heart, aortic arches and portal system. Understand the comparative study of brain and central nervous system. Understand the origin and evolution of ostracoderm. Understand the general organisation of gnathostomata.
	<b>Limnology</b>	Understand the scope and development of limnology Learn about physico-chemical characteristic of lake, pond etc. Understand the significance of aquatic flora and fauna. Understand the inter-relationship between zooplankton and phytoplankton. Get the knowledge of sewage treatment. Understand the causes of pollution and its management Understand resources conservation and its legislation.
	<b>Eco-Toxicology</b>	Study the concept of ecosystem. Study about remote sensing Get the knowledge of reuse and recycling of liquid and solid waste. Study about the basic concept of toxicology. Discuss about the important heavy metals and their role in environment.
	<b>Aquaculture</b>	Study about the basic concept of aquaculture and its importance. Learn various methods of fish culture Understand the phenomenon of fish breeding, hypo-physation and stripping. Discuss about the fresh water fish farm engineering. Learn the fish industry and its by product. Get the knowledge of biochemical composition and nutritional value of fish.
<b>M. Sc. Zoology IV Sem</b>	<b>Animal Behaviour and Neurophysiology</b>	Study the role of hormone on the control of human behaviour. Discuss the basic concept of ethology. Discuss the social and reproductive behaviour. Learn about the biological rhythm. Discuss various receptor physiologies.
	<b>Gamete Biology, Development and Differentiation</b>	Discuss the biochemistry of semen and its composition. Learn the endocrinology and physiology of placenta Study the biology of sex determination and sex differentiation. Discuss about embryonic stem cell.
	<b>Wild Life Conservation Ecotoxicology</b>	Understand the values of wild life and importance of its conservation. Discuss the management of wild life. Study the role of Indian Board of wild life, Bombay natural history society. Learn the concept of protected areas of national parks, Sanctuaries and community reserves. Get the knowledge of Bio-telemetry.
	<b>Environment and Biodiversity Conservation</b>	Get the knowledge of sustainable development. Develop the concept of Bioaccumulation. Get the knowledge of Environmental legislation. Study about the Natural Resources and its importance. Learn about Biodiversity and its value.
<b>M.Sc. Chemistry</b>		
<b>M. Sc. I Sem Chemistry</b>	<b>Inorganic Chemistry</b>	Know about the inorganic polymers. Explain the concept of coordination Chemistry, Understand the stability of the complexes Explain stereochemistry of complexes. Describe structure and bonding of complexes
	<b>Organic Chemistry</b>	Define concepts of stereochemistry, Describe conformational analysis and their application in the determination of reaction mechanism. Understand the mechanism of aliphatic nucleophilic and electrophilic substitution reactions.
	<b>Physical chemistry</b>	Explain the quantum mechanics and its significance. Describe the effect of temperature (Classical and Statistical Thermodynamics) on reaction rate. Explain angular momentum and Eigen functions
	<b>Spectroscopy</b>	Define the elements of group theory Explain the applications of group theory Understand Optical activity and chirality, Classify chiral molecules as asymmetric and dissymmetric. Brief the dissymmetry of allenes, biphenyls, spiro compounds, trans cyclo octane and cyclononene and molecules with helical Explain the absolute configuration - R, S notation of biphenyls and allenes. Explain Cram's rule. Differentiate Stereo specific and stereo selective reactions.

	<b>Mathematics for Chemist</b>	Explain the vectors
		Understand differential calculus, and integral calculus
		Solve differential equation
		understand permutation and probability
	<b>Biology for Chemist</b>	understand cell structure
		Draw the structure of animal and plant cell
		Understand functions of carbohydrates
		Explain amino acids
		Describe peptides, proteins,
		Differentiate between RNA and DNA.
<b>M. Sc. II Sem Chemistry</b>	<b>Inorganic Chemistry</b>	Know Coordination complexes
		Understand the Born-Haber cycle to calculate lattice energy
		Explain Electrical and Magnetic properties in Coordination complexes
		Describe metal $\pi$ complexes, metal clusters
		Explain optical rotatory dispersion and circular dichroism
	<b>Organic Chemistry</b>	To understand the mechanism of aromatic nucleophilic and electrophilic substitution reactions.
		Explain various types of reactions, rearrangements like addition reactions, elimination and pericyclic reactions.
		Describe the synthetic utility of reaction
	<b>Physical Chemistry</b>	Understand statistical thermodynamics and various partition functions
		Describe Quantum statistics and reversible thermodynamics.
		Explain surface chemistry, Electrode - Electrolytic interface.
		Understand the kinetics of polymerization and electrochemistry and related phenomenon.
	<b>Spectroscopy and Diffraction Method</b>	Understand the consecutive elementary reactions rate determining steps, steady state approximation, pre-equilibria, Michaelis-
		To understand the concepts of spectral techniques
		Describe techniques for the quantitative and structural analysis of organic compounds.
		Understand principle and instrumentation of $^1\text{H}$ NMR, $^{13}\text{C}$ NMR and Mass spectroscopy
<b>Computer for Chemist</b>	Understand principle and instrumentation of $^1\text{H}$ NMR, $^{13}\text{C}$ NMR and Mass spectroscopy	
	Understand of computing and computer programming	
	Understand C language	
<b>M. Sc. III Sem Chemistry</b>	<b>Applications of Spectroscopy</b>	Solve applications based problems in Chemistry
		To study the applications of different spectral techniques.
		Understand the working principles of spectroscopic techniques such as uv- visible IR, NMR spectroscopy.
		Understand the instrumentation and working of spectroscopic instruments like atomic mass and fluorescence.
		Learn the application of coupled techniques for quantization of data.
	<b>Photochemistry</b>	Learn the application and working of Mossbauer spectroscopy.
		Understand the laws of photochemistry (Grothus Draper Law and Stark Einstein law)
		Understand the principle of photochemical reactions, kinetics., its reaction mechanism
	<b>Environmental Chemistry</b>	Understand photochemistry in alkenes, carbonyl compounds and other photochemical reactions
		Understand the concept to awareness about environmental chemistry
		Understand the concept about atmosphere and different layer and composition
		Understand the concept. awareness about air pollution and organic inorganic pollutants
		Understand the concept, water pollution and domestic sewage waste water, industrial pollution agriculture pesticide water
	<b>Polymers Chemistry</b>	Understand the different methods of water treatment, water effluents and sewage water
		Understand the greenhouse gases and global warming
		Understand the basic concepts of polymerization
Understand the different methods of polymerization		
Understand various techniques of polymerization		
Understand the preparation, properties and applications of PE, PVC, Polystyrene, polyacrylonitrile		
<b>Heavy Chemicals and Petroleum</b>	Understand the concept Glass transition temperature	
	classify various polymerization, analysis and testing of polymers	
	Understand heavy chemicals	
	Purify water by different techniques	
<b>M. Sc. IV Sem Chemistry</b>	<b>Spectroscopy</b>	Describe coal and petroleum mining, refining, processes
		Understand applications and their products of respective characteristics.
		Understand the concept of fats and oils
	<b>Solid state chemistry</b>	Understand the mathematical foundations and
		Explain selection rules of different branches of spectroscopy
		Apply the principles of spectroscopy for the structural determination of molecules
		Understand basics of solid state reactions
	<b>Biochemistry</b>	Explain crystal defects
		Understand electronic property and band theory
		Understand organic solids and liquid crystal
understand the role of metal ions in biological systems,		
Explain bioenergetics, transport and storage		
<b>Medicinal Chemistry</b>	Understand electron transfer, nitrogen fixation	
	Understand enzymes and enzyme reactions, chemistry and applications	
	Understanding of the basic biological and pharmacological interactions by using both natural products and	
	Understand total synthesis of bioactive molecules	
<b>Industrial Chemistry-II</b>	Explain use of corresponding knowledge for the development of biologically and clinically active drugs.	
	Explain introduction to QSAR	
	Understand Chemistry, structure, mode of action of antibiotics, antibacterials, antifungal, antimalarials, and antihistaminic	
		Understand manufacture of cement
		Understand setting of cement

		Explain manufacture of steel and other important alloys
		Understand types, their composition & properties glass fibres
		Understand soaps and detergents
		Explain different categories of insecticides
<b>M.Com</b>		
<b>M.Com. I Semester</b>	<b>Management Concept</b>	To make the students understand the basic conceptual knowledge and scope of management function.
	<b>Business Environment</b>	To make the students understand the changing nature of the business environment in the context of national economy. To understand the economic, social, political factors that determines the business utility of a nation.
	<b>Advanced Accounting</b>	The objective of this course is to familiarize the students with practical application of advance accounting methods with
	<b>Cost Analysis and Control</b>	The objective of this paper is to provide necessary and detailed information about cost accounting in a practical way.
<b>M.Com. II Semester</b>	<b>Corporate Legal Framework</b>	The objective of this course is to provide basic concept, rules, regulation about corporate legal framework.
	<b>Functional Management</b>	The objective of this paper is to provide basic knowledge about functional management.
	<b>Advance statistics Analysis</b>	The objective of this course is to achieve a deep understanding of particular statistical methods and to learn to use some
	<b>Organization Behaviors</b>	The purpose of this paper is to examine and critically assess a number of key concepts and issues associated with behavior in
<b>M.Com. III Semester</b>	<b>Accounting for Managerial Decision</b>	The objective of this course is to familiarize the students with various tools and techniques of management accounting which
	<b>Tax Planning and Management</b>	The objective of this paper is to provide basic knowledge about Tax Planning and Management to students.
	<b>Entrepreneurship Skill Development</b>	The objective of this course is to familiarize the students with entrepreneurship skill development programs so that they can
	<b>Managerial Economics</b>	The objective of this course is to provide detailed information about those aspects of economics which are relevant for
<b>M.Com. IV Semester (Specialization – Marketing Management)</b>	<b>International Marketing</b>	This course will enable students to learn analytical skills required to develop international marketing plans and develop the
	<b>Rural Agriculture Marketing</b>	The objective of this paper is to provide knowledge about basic concept of Rural Agriculture Marketing.
	<b>Advertisement and Sales Promotion</b>	Through this course Advertisement and Promotion students will learn about the principles and significance of advertisement
	<b>Consumer Behavior</b>	To develop an understanding of consumer behavior from a variety of perspectives (multicultural, interdisciplinary, etc.) and to
<b>M.Com. IV Semester (Specialization – Financial Analysis &amp; Control)</b>	<b>Security Analysis and Portfolio</b>	The objective of this paper is to providing students an in-depth knowledge of the theory and practice of portfolio
	<b>Strategic Financial Management</b>	The objective of this paper is to provide students an in-depth knowledge about strategic financial management.
	<b>Project Planning and Management</b>	This course will make the students learn the fundamentals of project management: how to plan, initiate and execute a project
	<b>Indian Financial System</b>	The aim of this paper is to acquaint the students with fundamentals and basic concepts of Indian Financial System.
<b>M.Com. IV Semester (Specialization – Accounting)</b>	<b>Corporate Accounting</b>	The main objective of this course is to help students for accounting procedure in corporate.
	<b>Cost Administration and Control</b>	The objective of this paper is to provide necessary and detailed information about cost accounting in a practical way.
	<b>Accounting Theory</b>	The objective of this paper is to provide necessary and detailed information accounting theory.
	<b>Institutional Accounting</b>	The objective of this paper is to provide detailed information and knowledge about Institutional accounting and its practical workout.
<b>M.Com. IV Semester (Specialization – Taxation)</b>	<b>Direct Tax in India</b>	The objective of this paper contents is to provide basic conceptual knowledge and information about Direct Tax in India.
	<b>Business Taxation</b>	The objective of this paper is to provide students and in-depth knowledge about Business Taxation in India.
	<b>Goods and Service Tax Law and Practice</b>	The objective of this paper is to understand various concepts of Goods & Service Tax of India and also understand the impact
	<b>Custom Duty and Practices</b>	The objective of this paper content is to provide basic custom duty and its practices in current scenario.
<b>Masters of Library &amp; Information Science (M.L.I.Sc.)</b>		
<b>Masters of Library &amp; Information Science (M.L.I.Sc.)</b>	<b>Universe of Subjects &amp; Research Methodology</b>	Students should be familiar with ethical issues in educational research, including those issues that arise in using quantitative
		Understand some basic concepts of research and its methodology.
		Identify appropriate research topics.
		Select and define appropriate research problem and parameters.
		Write a report writing and use of graphics in report.
		Students should know how to conduct a statistical test of a hypothesis.
	<b>Advanced Library Organization and Management Academic library System</b>	Familiar with data collection techniques.
		To Known about the role of institutions for promoting the academic libraries.
		Familiar with Indian education commissions and committees reports.
		To identify the HR Policies, Personal Management, Manpower Planning, HRD Quality Improvement Programmes. UGC
		To know about the role of internet and various information centers for promoting
	<b>Information Processing Retrieval Systems</b>	Familiar with IS&R activities and techniques.
		To know about the indexing systems.
		Understand the major networking system of India and Abroad.
		To well-known with the reprography services and technology.
<b>Knowledge Organization and Processing (Practical)</b>	Method-I	
	Classification Practical UDC 3 <sup>rd</sup> Revised Edition	
	Known the purpose of library classification	
	To identify the UDC scheme.	
	Familiar with the need, principles, rules, regulations of UDC classification Scheme.	
	To identified the concept of main classes in UDC.	
	Proficient with to solve the Title of UDC 3 <sup>rd</sup> Revised Edition.	
	Method-II	
	Cataloguing Practical AACR-II	
	To familiar with describe Entry, Main entry and Added entries.	
	To well -known the various sections of main entry of AACR-II.	
	To known the sections of various added entries of AACR-II.	
	Well- Known with non book materials entries.	
	Able to the solve Questions of AACR-II.	
<b>Information Communication and Society</b>	To understand the role of information, data and knowledge in society.	
	To know the information generation, information theory and various communication	
	To well-known with information diffusion process and knowledge generation cycle.	
	Understand the role of information as a Economic point of view.	

		To know the various national and international information policies.
	<b>Information Sources, Systems and Programmes</b>	Understands the various physical medium of information. To Familiar with various information sources, system and programmes. To well-Known the International information agencies in different fields. To understand the rural, government and institution information systems. Understand the importance of user education programme.
	<b>Information Technology: Applications</b>	An understanding of professional, ethical, legal, security and social issues and responsibilities. An ability to analyze the local and global impact of computing on individuals, organizations, and society. Recognition of the need for and an ability to engage in continuing professional development. An ability to use current techniques, skills, and tools necessary for computing practice Internet Technologies :Students will develop a basic understanding of technologies and protocols used on the Internet, and
	<b>Information Institutions, Products and Services</b>	Understand the role Referral Centers, Information Analysis and Consolidation Centers To well known the different information services. To know the diverse information products and online information systems and networks. To understand the different national and international information centers.
<b>MPT</b>		
<b>MPT I Yr. Orthopaedics : Orthopaedic Physiotherapy</b>	<b>Basic medical sciences &amp; principles of physiotherapy practice</b>	The student is able to revise the basics of medical sciences in bpt.
		The basics of anatomy
		The basics of physiology
		The basics of pathology
		The basics of pharmacology
		The basics of radiology
	<b>Biomechanics &amp; kinesiology</b>	The student is able to revise the basics of biomechanics and kinesiology in bpt.
		The aim & objectives of kinesiology in physiotherapy.
		The anatomical concepts of bones,joints,muscles & nerves. The principles of biomechanics in various activities and sports.
	<b>Research methodology &amp; biostatistics and educational methodology</b>	RESEARCH METHODOLOGY
		To develop skills of critical thinking and selection of research strategy.
		To acquire skills to review literature, formulate problems, research writing and publishing.
		BIOSTATISTICS
		The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection,
		EDUCATIONAL METHODOLOGY
To understand the concept of morality, ethics & legality.		
To learn the communication skills		
To understand the principles and applications of Management and Administration to Physiotherapy Practice.		
To know the aims & objectives of physiotherapy education.		
To understand the concept of teaching-learning.		
Teaching aids & teaching technology		
To gain the knowledge of Curriculum construction.		
<b>MPT II Yr. Orthopaedics : Orthopaedic Physiotherapy</b>	<b>Exercise physiology &amp; nutrition</b>	The student will be able to understand the physiological nutritional values during exercise .
		The concept of energy conservation and transfer for physical activity.
		The changes occurring in various body system due to exercise.
		To study about body composition & weight control To study the changes or adaptations in body during exposure to different conditions.
	<b>Physical diagnosis &amp; rehabilitation</b>	The student learns effects various techniques and modalities used in physiotherapy.
		The student will undergo clinical training in the health centre on various apparatus of physical medicine.
		To study rehabilitation of injuries in upper and lower limbs To study rehabilitation in other conditions .
	<b>Pt in orthopedics diseases &amp; orthopedics fractures</b>	The student will be able to understand the pathophysiology, signs and symptoms,medical and physiotherapy management of orthopaedic conditions.
		The pt management in various degenerative and infective conditions.
		The pt management in deformities
		The pt management in traumatology and orthopaedics The pt management in orthopaedics surgeries.
	<b>Advanced physiotherapy in orthopaedic surgery</b>	The student is able to evaluate the surgical condition and give appropriate pre and post physiotherapy management.
		The post surgical complications and their management. Learn the disability and functional evaluation.
	<b>Dissertation</b>	To train a graduate student in research methods and techniques.
		It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances.
To learn to design the research study, collection of data, critical analysis, and comparison of results and drawing conclusions.		
<b>MPT I Yr. Neurology : Neurologic Physiotherapy</b>	<b>Basic medical sciences &amp; principles of physiotherapy practice</b>	The student is able to revise the basics of medical sciences in bpt.
		The basics of anatomy
		The basics of physiology
		The basics of pathology
		The basics of pharmacology
		The basics of radiology
	<b>Biomechanics &amp; kinesiology</b>	The basics of rheumatology & geriatric disorders.
		The student is able to revise the basics of biomechanics and kinesiology in bpt.
		The aim & objectives of kinesiology in physiotherapy.

		The anatomical concepts of bones,joints,muscles & nerves.		
		The principles of biomechanics in various activities and sports.		
	<b>Research methodology &amp; biostatistics and educational methodology</b>	RESEARCH METHODOLOGY To develop skills of critical thinking and selection of research strategy. To acquire skills to review literature, formulate problems, research writing and publishing. BIOSTATISTICS The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently. EDUCATIONAL METHODOLOGY To understand the concept of morality, ethics & legality. To learn the communication skills To understand the principles and applications of Management and Administration to Physiotherapy Practice. To know the aims & objectives of physiotherapy education. To understand the concept of teaching-learning. Teaching aids & teaching technology To gain the knowledge of Curriculum construction.		
<b>MPT II Yr. Neurology : Neurologic Physiotherapy</b>	<b>Exercise physiology &amp; nutrition</b>	The student will be able to understand the physiological nutritional values during exercise . The concept of energy conservation and transfer for physical activity. The changes occurring in various body system due to exercise. To study about body composition & weight control To study the changes or adaptations in body during exposure to different conditions.		
	<b>Physical diagnosis &amp; rehabilitation</b>	The student learns effects various techniques and modalities used in physiotherapy. The student will undergo clinical training in the health centre on various apparatus of physical medicine. To study rehabilitation of injuries in upper and lower limbs To study rehabilitation in other conditions .		
	<b>Pt in neurological diseases</b>	The student will be able to understand the pathophysiology, signs and symptoms,medical and physiotherapy management of neurological conditions. The Pt management in neoplasms The pt management in various infections in CNS		
	<b>Advanced neuro physiotherapy</b>	The student is able to evaluate the surgical condition and give appropriate pre and post physiotherapy management. The post surgical complications and their management. Learn the evaluation of neurological disorders. Learn various therapeutic techniques in rehabilitation.		
	<b>Dissertation</b>	To train a graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances. To learn to design the research study, collection of data, critical analysis, and comparison of results and drawing conclusions.		
	<b>MPT I Yr. Cardiothoracic : Cardiopulmonary Physiotherapy</b>	<b>Basic medical sciences &amp; principles of physiotherapy practice</b>	The student is able to revise the basics of medical sciences in bpt. The basics of anatomy The basics of physiology The basics of pathology The basics of pharmacology The basics of radiology  The basics of rheumatology & geriatric disorders.	
		<b>Biomechanics &amp; kinesiology</b>	The student is able to revise the basics of biomechanics and kinesiology in bpt. The aim & objectives of kinesiology in physiotherapy. The anatomical concepts of bones,joints,muscles & nerves. The principles of biomechanics in various activities and sports.	
		<b>Research methodology &amp; biostatistics and educational methodology</b>	RESEARCH METHODOLOGY To develop skills of critical thinking and selection of research strategy. To acquire skills to review literature, formulate problems, research writing and publishing. BIOSTATISTICS  The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently. EDUCATIONAL METHODOLOGY To understand the concept of morality, ethics & legality.  To learn the communication skills To understand the principles and applications of Management and Administration to Physiotherapy Practice. To know the aims & objectives of physiotherapy education. To understand the concept of teaching-learning. Teaching aids & teaching technology To gain the knowledge of Curriculum construction.	
		<b>MPT II Yr. Cardiothoracic : Cardiopulmonary Physiotherapy</b>	<b>Exercise physiology &amp; nutrition</b>	The student will be able to understand the physiological nutritional values during exercise . The concept of energy conservation and transfer for physical activity. The changes occurring in various body system due to exercise. To study about body composition & weight control To study the changes or adaptations in body during exposure to different conditions.
			<b>Physical medicine &amp; rehabilitation</b>	The student learns effects various techniques and modalities used in physiotherapy. The student will undergo clinical training in the health centre on various apparatus of physical medicine. To study rehabilitation of injuries in upper and lower limbs To study rehabilitation in other conditions .
			<b>Pt in cardiothoracic diseases</b>	The student will be able to understand the pathophysiology, signs and symptoms,medical and physiotherapy management of cardiothoracic conditions. The Pt management in cardiorespiratory disorders

		The pt management of cardiorespiratory diseases The adjuncts to chest physiotherapy.	
	<b>Advance physiotherapy in cardiovascular surgery</b>	The student is able to evaluate the surgical condition and give appropriate pre and post physiotherapy management. The post surgical complications and their management. Learn the methods used in diagnosis of cv diseases. Learn to manage in Icu.	
	<b>Dissertation</b>	To train a graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances. To learn to design the research study, collection of data, critical analysis, and comparison of results and drawing conclusions.	
<b>MPT I Yr. Obstetrics &amp; Gynecology : Physiotherapy in Obs. &amp; Gynecological Conditions</b>	<b>Basic medical sciences &amp; principles of physiotherapy practice</b>	The student is able to revise the basics of medical sciences in bpt. The basics of anatomy The basics of physiology The basics of pathology The basics of pharmacology The basics of radiology The basics of rheumatology & geriatric disorders.	
		<b>Biomechanics &amp; kinesiology</b>	The student is able to revise the basics of biomechanics and kinesiology in bpt. The aim & objectives of kinesiology in physiotherapy. The anatomical concepts of bones,joints,muscles & nerves. The principles of biomechanics in various activities and sports.
		<b>Research methodology &amp; biostatistics and educational methodology</b>	RESEARCH METHODOLOGY To develop skills of critical thinking and selection of research strategy. To acquire skills to review literature, formulate problems, research writing and publishing. BIOSTATISTICS The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently. EDUCATIONAL METHODOLOGY To understand the concept of morality, ethics & legality. To learn the communication skills To understand the principles and applications of Management and Administration to Physiotherapy Practice. To know the aims & objectives of physiotherapy education. To understand the concept of teaching-learning. Teaching aids & teaching technology To gain the knowledge of Curriculum construction.
	<b>MPT II Yr. Obstetrics &amp; Gynecology : Physiotherapy in Obs. &amp; Gynecological Conditions</b>	<b>Research methodology &amp; biostatistics and educational methodology</b>	The student will be able to understand the physiological nutritional values during exercise . The concept of energy conservation and transfer for physical activity. The changes occurring in various body system due to exercise. To study about body composition & weight control To study the changes or adaptations in body during exposure to different conditions.
		<b>Physical diagnosis &amp; rehabilitation</b>	The student learns effects various techniques and modalities used in physiotherapy. The student will undergo clinical training in the health centre on various apparatus of physical medicine. To study rehabilitation of injuries in upper and lower limbs To study rehabilitation in other conditions .
		<b>Physiotherapy in obstetrics &amp; gynaecology</b>	The student will be able to understand the pathophysiology, signs and symptoms of obs/gyn conditions. The medical and physiotherapy management of obstetrics & gynaecological conditions. The clinical importance of pre and postnatal exercises.
		<b>Advance physiotherapeutics in obstetrics and gynaecology</b>	The student is able to evaluate the surgical condition and give appropriate pre and post physiotherapy management. The post surgical complications and their management. The diseases of various parts of genital areas. The diagnostic approaches in obs/gyn. Conditions.
		<b>Dissertation</b>	To train a graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances. To learn to design the research study, collection of data, critical analysis, and comparison of results and drawing conclusions.
	<b>MPT I Sports : Sports Physiotherapy</b>	<b>Basic medical sciences &amp; principles of physiotherapy practice</b>	The student is able to revise the basics of medical sciences in bpt. The basics of anatomy The basics of physiology The basics of pathology The basics of pharmacology The basics of radiology The basics of rheumatology & geriatric disorders.
			<b>Biomechanics &amp; kinesiology</b>
<b>Research methodology &amp; biostatistics and educational methodology</b>			RESEARCH METHODOLOGY To develop skills of critical thinking and selection of research strategy. To acquire skills to review literature, formulate problems, research writing and publishing. BIOSTATISTICS The objectives of this course are to install a deep sense of data appreciation and to develop basic statistical skills in collection, compilation, analysis and interpretation of data. After undergoing this course, a student is expected to plan and execute a statistical project quite independently. EDUCATIONAL METHODOLOGY To understand the concept of morality, ethics & legality. To learn the communication skills To understand the principles and applications of Management and Administration to Physiotherapy Practice. To know the aims & objectives of physiotherapy education. To understand the concept of teaching-learning. Teaching aids & teaching technology To gain the knowledge of Curriculum construction.
<b>MPT II Sports : Sports Physiotherapy</b>		<b>Exercise physiology &amp; nutrition</b>	The student will be able to understand the physiological nutritional values during exercise . The concept of energy conservation and transfer for physical activity.

		The changes occurring in various body system due to exercise. To study about body composition & weight control To study the changes or adaptations in body during exposure to different conditions.
	<b>Physical diagnosis &amp; rehabilitation</b>	The student learns effects various techniques and modalities used in physiotherapy. The student will undergo clinical training in the health centre on various apparatus of physical medicine. To study rehabilitation of injuries in upper and lower limbs To study rehabilitation in other conditions.
	<b>Sports physiotherapy</b>	The student will be able to understand the pathophysiology, signs and symptoms in sports injury. The medical and physiotherapy management in sports injury. The prevention of sports injury. The concept acute and overuse injuries. The assessment and principles of manipulation.
	<b>Advanced physiotherapeutic in sports physiotherapy</b>	To provide students with information with regard to the theoretical constructs used in the interpretation of behaviour to make students appreciate the significance of psychological application in the field of physiotherapy. To provide advance knowledge and skills related to sport injuries prevention, assessment and diagnosis, treatment, management and rehabilitation along with sports training and overall health and fitness improvement for athletes, general and special population.
	<b>Dissertation</b>	To train a graduate student in research methods and techniques. It includes identification of a problem, formulation of a hypothesis search and review of literature getting acquainted with recent advances. To learn to design the research study, collection of data, critical analysis, and comparison of results and drawing conclusions.
<b>Vocational</b>		
<b>B.Sc. I Year</b>	<b>Nutrition and Dietetics</b>	Understand the relationship between food nutrition and health Understand various functions of food and food groups Understand digestion, absorption and functions of various nutrients and their sources Understand importance of balanced diet to reduce risk of deficiency diseases
<b>B.Sc. II Year</b>	<b>Nutrition and Dietetics</b>	Plan diets for early childhood Plan diets for school going children Plan diets for adults Plan diets for pregnancy and lactation Plan diets for old age
<b>Microbiology</b>	<b>Medical Diagnostics</b>	Understand importance of medical diagnostics and its role in global market. Gain knowledge about essential concepts of medical diagnostics. Learn about diagnostic methods used to identify disease and its analysis and facilitate treatment procedure. Describe the components of body fluids their characteristics and abnormalities. Explain diseases and diagnostic medical techniques used.
<b>Zoology</b>	<b>Vermicomposting</b>	Understand concepts of biofertilizers like vermicomposting. Understand techniques in vermicomposting. Get the opportunities of employment Improve the soil quality by promoting the fertilizers.
<b>B Com</b>	<b>Digital Marketing</b>	Understand digital marketing, importance thereof, meaning of web site and levels of web site, difference between blog, portal & amp; Website. Understand the working of SEO on page optimization, off page optimization, and will learn to prepare reports. Learn about SMO like Facebook, Twitter, LinkedIn, Tumblr, Pinterest and other social media services optimization Understand paid tools like Google ad words, display advertising techniques. Learn and apply hands on experience on tools useful to SEO for analysis on website traffic, keyword analysis and learn email marketing and ad designing.
	<b>Web Designing</b>	Code a handful of useful HTML & CSS examples. Build semantic, HTML & CSS webpage Write basic scripts Use Names, Objects, and Methods Add Interactivity to a Web Page Create Dynamic Web Pages using JavaScript in HTML forms.
<b>BXRT I Year</b>	<b>Anatomy and Physiology of Human Body – Part -I</b>	Explain Anatomy related to human. Understand about lab management. Understand about Physiology of human. Understanding of different anatomical position of human body. Understand about systems of human body.
	<b>Radiographic Photography</b>	Define photographic latent image. Positive process. Understanding Light and radiation. Understand and analyze film materials in x-ray department. History, structure of an x-ray film, single sided films, types of films. To demonstrate cassette design, care of cassettes, mounting of intensifying screens. To test to check light leakage in the cassette. To check the effect of safe light on exposed as well as unexposed X-ray film.
	<b>Basic Radiological Physics</b>	Explain the Structure of matter and principles of machines. Understand Physics principles in design and working of x-ray tube technology. To understand measurement of tube current in milli and microamperes. Physical principles of radiation and optical field coverage and the factor affecting the field projected on patient during x-ray imaging and radiotherapy exponential and trigonometric functions used in radiological calculations
	<b>Radiation protection &amp; Radiation Prology</b>	Definition radiation hazards maximum permissible dose and annual limit of intake (ALI). Understand permissible dose levels on and around sealed source housing and installation principles of radiation protection. Explain MPD's of different ICRP rules and stochastic and non-stochastic effects. Understanding importance of 'ALARA' physical principles of design and planning of radiation installation. Understand Safe work practice in tele therapy and Brach therapy.
<b>BXRT II Year</b>	<b>Anatomy and Physiology of Human Body – Part -II</b>	To understand types of cells, tissues, bones and joints. Understand about system and cavities of the body. Understand about different system and organs of body.
	<b>Radiation Physics Including Radiation Protection</b>	Define Atomic structure as applied to generation of x-rays and radioactivity spectrum of diagnostic imaging and therapy x-rays. Understanding the Laws of radioactivity and decay schemes of different alpha, beta, gamma ray, negatron and positron emitters as used in medicine especially in radiotherapy. To know factors used for treatment dose calculation method. To Know and apply physical aspects of electron and neutron beam therapy.
	<b>Basic Radiographic Technique</b>	Explain the radiography techniques for various anatomical position of body.



		Understand the radiography techniques for dental.
		Understand macro radiography.
		Understand stereography.
	<b>C.T. Imaging Techniques &amp; MRI Imaging Techniques</b>	Understanding Basic Physics of CT & MRI.
		Understand Basic Computer Operation, Positioning in CT & MRI.
		Understanding Basic data acquisition concepts, reformation and reconstruction of CT images and image archiving.
		To know Historical background, various generation of scanner, advancements in CT Technology.
		To Perform MRI of Head & Neck, Thorax, Abdomen. Musculoskeletal system
<b>BXRT III Year</b>	<b>Radiotherapy Planning and quality control</b>	Definition of treatment planning.
		Understand Planning procedure in general with special emphasis on tumour localization and target volume measurement by conventional radiographic method and simulator imaging.
		Understand about Acceptance tests on therapy simulators.
		To Know Role of treatment, shall immobilization devices and laser in patients set up and positioning.
	<b>Equipment for Radio-diagnosis including newer Development and quality control</b>	To demonstrate computed tomography.
		Understanding Quality Assurance in Radio diagnosis.
		Understanding the concepts of Diagnostic Ultrasound.
		To perform digital radiography
	<b>Radiography:- Techniques including special procedures</b>	Explain Radiological procedure pertaining to salivary glands, lacrimal system, bronchography, arthrography and hystero salpangiography.
		Understand Ventriculography and Encephalography.
		Understand Myelography and Angiography.
	<b>Digital Radiography</b>	Understand Digital Radiography.
		Explain Digital Radiography system.
		To Understand Mammography System.
		To Understand Film archiving systems