SRI VENKATESWARA COLLEGE

2020-21

EVEN SEMESTER

TEACHING PLANS

Department of Mathematics
Sri Venkateswara College
Even Semester Teaching Plan (Jan-April 2021)

Ms. Shakuntla Wadhwa

Month		Topics	Course	Paper Name and code
January	Theory	Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruence	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Practical 1	1. Solution of Cauchy problem for First order PDE 2. Plotting the Characteristics for the first order PDE	B.Sc. (H) Mathematics II year	Partial Differential Equations, C8
	Practical 2	1. Declaring a complex number and its graphical representation 2. Algebra of complex numbers. 3. To find conjugate, modulus and phase angle of an array of complex numbers.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
February	Theory	Set of residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem, Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of Dirichlet function.	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Practical 1	4. Plot the Integral surfaces of a given first order PDE with initial data. 5. Solution of wave equation Solution of heat equation	B.Sc. (H) Mathematics II year	Partial Differential Equations, C8

	Practical 2	4. To compute integral over straight line path between the two specified end points. 5. To perform contour integration 6. To plot the complex functions and analyze the graph	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
March	Theory	The Mobius inversion formula, the greatest integer function, Euler's phi function, Euler's theorem, reduced set of residues, Order of an integer modulo n, primitive roots for primes, composite numbers having primitive roots.	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Practical 1	7. Solving system of ordinary differential equations. 8. Solution to Initial value problem by using Euler method	B.Sc. (H) Mathematics II year	Partial Differential Equations, C8
	Practical 2	9. To obtain the Taylor series expansion of given function f(z) around given point z0. 10. To obtain how many terms should be used in the Taylor series expansion of a given function to get a percentage error of less than 5%. 11. To compute the poles and corresponding residues of complex functions.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III year	DSE IV
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics III year	DSE IV

	Internal Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics III year	DSE IV
April	Theory	Euler's criteria, the Legendre symbol and its properties, quadratic reciprocity, quadratic congruences, Public key encryption and decryption, Fermat's last theorem.	B.Sc. (H) Mathematics III year	DSE IV Number Theory
	Practical 1	6. Discuss the pointwise convergence of given sequences of functions 7. Discuss the uniform convergence of given sequences of functions	B.Sc. (H) Mathematics II year	Partial Differential Equations, C8
	Practical 2	12. To obtain Laurent series expansion of given function around given point. 13. To perform conformal mapping and bilinear transformations.	B.Sc. (H) Mathematics III B	Complex Analysis, C13

Dr. R K Budhraja

Month		Topics	Course	Paper Name and code
January	Theory	Properties of Complex Numbers, Regions in Complex plane, Functions of Complex variable, Mappings, Differentiability, Cauchy- Riemann equations, Analytic function, Exponential function, Logarithmic function, Trigonometric function.	B.Sc. (H) Mathematics III yr A	Complex Analysis, C13
	Practicals	8. Declaring a complex number and its graphical representation 9. Algebra of complex numbers. 10. To find conjugate, modulus and phase angle of an array of complex numbers.	B.Sc. (H) Mathematics III yr A	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III A	C13
February	Theory	Derivatives of function, Definite Integrals of functions, Contours, Contour Integrals and its examples, Upper bounce for moduli of contour Integrals, Antiderivatives, Proof of Antiderivative Theorem, Cauchy-Goursat Theorem.	B.Sc. (H) Mathematics III yr A	Complex Analysis, C13
	Practicals	11. To compute integral over straight line path between the two specified end points. 12. To perform contour integration 13. To plot the complex functions and analyze the graph	B.Sc. (H) Mathematics III A	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III A	C13

March				
	Theory	Cauchy Integral Formula, Extension of Cauchy Integral formula, Some consequences of the extension, Exercise problems. Liouville's theorem, Fundamental theorem of Algebra, Convergence of sequences and series. Taylor series and its examples, Laurent series and its examples, Absolute and Uniform convergence of power series.	B.Sc. (H) Mathematics III A	Complex Analysis, C13
	Practicals	14. To obtain the Taylor series expansion of given function f(z) around given point z0. 15. To obtain how many terms should be used in the taylor series expansion of a given function to get a percentage error of less than 5%. 16. To compute the poles and corresponding residues of complex functions.	B.Sc. (H) Mathematics III A	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III A	C13
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics III A	Complex analysis
March	Internal Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics III A	Complex analysis
April	Theory	Uniqueness of series representations of power series. Isolated singular point, Residues, Cauchy's Residue Theorem, Types of Isolated Singular point, Residues at poles, Definite Integrals Involving Sines and Cosines	B.Sc. (H) Mathematics III A	Complex Analysis, C13

	Practicals	17. To obtain Laurent series expansion of given function around given point. 18. To perform conformal mapping and bilinear transformations.	B.Sc. (H) Mathematics III A	Complex Analysis, C13

Dr. Mainak Mukherjee

Month		Topics	Course	Paper Code/Name
Jan	**Theory:**	Definition of Riemann integration, Inequalities for upper and lower Darboux sums, Necessary and sufficient conditions for the Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions,Riemannintegrability of monotone functions and continuous functions, Algebra and properties of Riemann integrable functions.	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Practicals:	NA	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Definition of Riemann integration, Inequalities for upper and lower Darboux sums, Necessary and sufficient conditions for the Riemann integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions,Riemannintegrability of monotone functions and continuous	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Practicals	1. Bisection method 2. Secant method and Regula−Falsi method 3. Newton−Raphson method	GE-IV	Numerical Methods
	Theory:	Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, Intermediate value theorem for integrals, First and second fundamental theorems of integral calculus, and the integration by parts, Improper integrals of Type-I, Type-II and mixed type, : Convergence of beta and gamma functions, and their properties, Definitions and examples of pointwise and uniformly convergent sequence of functions.	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Practicals:	NA	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions

Feb	**Tutorials:**	To discuss the doubt of students and various exercise questions and examples related to Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, Intermediate value theorem for integrals, First and second fundamental theorems of integral calculus, and the integration by parts, Improper integrals of Type-I, Type-II and mixed type, : Convergence of beta and gamma functions, and their properties, Definitions and examples of pointwise and uniformly convergent sequence of functions.	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Practicals:	4. Gaussian elimination method and Gauss−Jordan method 5. Jacobi method and Gauss−Seidel method 6. Lagrange interpolation and Newton interpolation	GE-IV	Numerical Methods
March	**Theory:**	Motivation for uniform convergence by giving examples, Theorem on the continuity of the limit function of a sequence of functions, The statement of the theorem on the interchange of the limit function and derivative, and its illustration with the help of examples, The interchange of the limit function and integrability of a sequence of functions, Pointwise and uniform convergence of series of functions, Theorems on the continuity, derivability and integrability of the sum function of a series of functions.	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions

	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Motivation for uniform convergence by giving examples, Theorem on the continuity of the limit function of a sequence of functions, The statement of the theorem on the interchange of the limit function and derivative, and its illustration with the help of examples, The interchange of the limit function and integrability of a sequence of functions, Pointwise and uniform convergence of series of functions, Theorems on the continuity, derivability and integrability of the sum function of a series of functions.	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Assignments	To be given assignment related to syllabus.		
	Test	To take internal Test.		
	Practicals:	7. Trapezoidal and Simpson's rule. 8. Euler methods for solving first order initial value problems of ODE's.	GE-IV	Numerical Methods
	Test	To take internal Lab Test.		

April	**Theory:**	Cauchy criterion for the uniform convergence of series of functions, and the Weierstrass M-test for uniform convergence, : Definition of a power series, Radius of convergence, Absolute and uniform convergence of a power series	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
	Practicals:	NA	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions

Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Cauchy criterion for the uniform convergence of series of functions, and the Weierstrass M-test for uniform convergence, : Definition of a power series, Radius of convergence, Absolute and uniform convergence of a power series	B.Sc(H) MathsSem-IV B	BMATH409: Riemann Integration & Series of Functions
Practicals:	Revision of Practical	GE-IV	Numerical Methods

Ms. Pratibha Gaur

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Introduction, classification, construction and geometrical interpretation of first order partial differential equations (PDE), method of characteristic and general solution of first order PDE, canonical form of first order PDE, method of separation of variables for first order PDE.)	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations
	Tutorials	To Discuss the doubt of students and to solve various exercise of Definition and examples of rings, properties of rings, subrings, integral domains and fields, characteristic of a ring. Ideals, ideal generated by a subset of a ring, factor rings, operations on ideals, prime and maximal ideals.	B.Sc(H) Maths Sem-IV B	Ring Theory & Linear Algebra-I
	Practicals	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE. 3. Plot the integral surfaces of a given first order PDE with initial data.	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations
Feb	**Theory**	Mathematical modeling of vibrating string, vibrating membrane, conduction of heat in solids, gravitational potential, conservation laws and Burger's equations, classification of second order PDE, reduction to canonical forms, equations with constant coefficients, general solution.	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations

Tutorials	To Discuss the doubt of students and to solve various exercise of Ring homomorphisms, properties of ring homomorphisms, Isomorphism theorems I, II and III, field of quotients.	B.Sc(H) Maths Sem-IV B	Ring Theory & Linear Algebra-I
Practicals	Solution of wave equation for associated conditions, Solution of one-Dimensional heat equation for a homogeneous rod of length l with various examples.	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations
Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-IV	PDE

March	**Theory**	Cauchy problem for second order PDE, homogeneous wave equation, initial boundary value problems, non-homogeneous boundary conditions, finite strings with fixed ends, non-homogeneous wave equation, Riemann problem, Goursat problem, spherical and cylindrical wave equation, Method of separation of variables for second order PDE.	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations
	Tutorials	To Discuss the doubt of students and to solve various exercise of Vector spaces, subspaces, algebra of subspaces, quotient spaces, linear combination of vectors, linear span, linear independence, basis and dimension, dimension of subspaces. Linear transformations, null space, range, rank and nullity of a linear transformation	B.Sc(H) Maths Sem-IV B	Ring Theory & Linear Algebra-I
	Practicals	Solving systems of ordinary differential equations, Approximating solution to Initial Value Problems using approximate methods with various examples, To draw sequence of functions on given the interval and discuss the pointwise convergence.	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations
	Assignments	To give assignment related to syllabus		
	Test	To take internal test related to syllabus and internal lab test related to above Practicals.	B.Sc(H) Maths Sem-IV	PDE

April	**Theory**	Vibrating string problem, existence and uniqueness of solution of vibrating string problem, heat conduction problem, existence and uniqueness of solution of heat conduction problem, Laplace and beam equation, non-homogeneous problem and to revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-IV B	C8 Partial Differential Equations
	Tutorials	To Discuss the doubt of students and to solve various exercise of matrix representation of a linear transformation, algebra of linear transformations. Isomorphisms, Isomorphism theorems, invertibility and isomorphisms, change of coordinate matrix.	B.Sc(H) Maths Sem-IV B	Ring Theory & Linear Algebra-I
	Practicals	Discuss the uniform convergence of sequence of functions with various examples and to revise whole syllabus.	B.Sc(H) Maths Sem-IV	C8 Partial Differential Equations
	Test	To take test related to syllabus and internal lab test related to above Practicals.	B.Sc(H) Maths Sem-IV	PDE

Dr. Swarn Singh

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	To introduce the concepts of Significant digits, Error, Order of a method, Convergence and terminal conditions, Efficient computations Bisection Method, Secant method and various problems related to these and to discuss various theorems related to convergence of the method	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
	Practicals:	Bisection method, Secant method and Regula-Falsi method	B.Sc.(Hons.) Sem IV	GE Numerical Analysis
		Downloading and installing statistical software R, R as calculator, reading and getting data into R: combine and scan commands, viewing named objects and removing objects from R, types and	B.Sc.(Hons.) Mathematics Sem-IV	SEC-II CAS and related softwares
		Practical 2- plotting the characteristics for 1 st order pde	B.Sc.(Hons.) Mathematics Sem-IV	BMATH 408 Partial Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Bisection method, Secant method, Order of a method	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
FEBRUARY	**Theory:**	Regula Falsi method, Newton Raphson method, Newton's method for solving nonlinear systems, Gauss elimination method with row pivoting and Gauss Jordan method, Gauss Thomas method for tridiagonal systems, Iterative methods: Jacobi method, Gauss-Seidel method and various problems related to these and to discuss various theorems related to convergence of these methods.	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
	Practicals:	Newton-Raphson method, Gaussian elimination method and Gauss-Jordan method	B.Sc.(Hons.) Sem IV	GE Numerical Analysis
		Exercises based on R: manipulating vectors, data frames, matrices and lists, viewing objects within objects, constructing data objects and conversions, summary commands, stem and leaf plot,	B.Sc.(Hons.) Mathematics Sem-IV	SEC-II CAS and related softwares

		histogram, scatter plot, pairs plot, bar charts		
		Practical 1- Cauchy problem for 1 st order PDE Practical 3- plotting the integral surfaces Practical 4- solution of wave equation	B.Sc.(Hons.) Mathematics Sem-IV	BMATH 408 Partial Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Newton-Raphson method, Gaussian elimination method and Gauss-Jordan method, Jacobi method, Gauss-Seidel method	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
MARCH	**Theory:**	Gauss-Seidel iterative method,Interpolation: Lagrange's form and Newton's form, Finite difference operators, Gregory Newton forward and backward difference Interpolation and various problems related to these and to discuss various theorems related to convergence of these methods.	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
		Lagrange interpolation and Newton interpolation, Numerical differentiation: First derivatives and second order derivatives, Numerical integration: Trapezoid rule, Simpson's rule	B.Sc.(Hons.) Sem IV	GE Numerical Analysis
		Practical 5- Solution of 1-D heat equation Practical 6- solving ODE	B.Sc.(Hons.) Mathematics Sem-IV	BMATH 408 Partial Differential Equations
	Practicals:	Plotting in R: line charts, pie charts, box-whisker plots, Cleveland dot charts, bar charts, explore data and relations, saving graphs	B.Sc.(Hons.) Mathematics Sem-IV	SEC-II CAS and related softwares
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Lagrange interpolation and Newton interpolation, Numerical differentiation: First derivatives and second order derivatives, Numerical integration: Trapezoid rule, Simpson's rule	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis

	Assignment	Assignment to be given related to syllabus.	B.Sc.(Hons.)Maths Sem V	DSE-2 Numerical Analysis
APRIL	**Theory**	Newton Cotes open formulas, Extrapolation methods: Romberg integration, Gauss quadrature, Ordinary differential equation: Euler's method, modified euler's method:Heun method and mid-point method, Runge-Kutta second order methods:Heun method without iteration, Mid-point method and Ralston's method, Classical 4^{th} order Runge-Kutta method, Finite difference method for linear ODE	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
	Practicals:	Trapezoidal rule, Simpson's rule and Euler methods for solving first order initial value problems of ODE's.	B.Sc.(Hons.) Sem IV	GE Numerical Analysis
		Summary statistics for vectors, data frames, matrices and lists; summary tables.	B.Sc.(Hons.) Mathematics Sem-IV	SEC-II CAS and related softwares
		Practical 7- pointwise convergence Practical 8- uniform convergence	B.Sc.(Hons.) Mathematics Sem-IV	BMATH 408 Partial Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
	Test	To take internal Test based on the syllabus covered.	B.A.(Prog.) Sem VI	DSE-2 Numerical Analysis
		To take internal Lab Test based on the syllabus covered.	B.Sc.(Hons.) Mathematics Sem-IV	SEC-II CAS and related softwares

Dr. Deepti Jain

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Algebraic and order properties of R, d-neighborhood of a point in R, Idea of countable sets, uncountable sets and uncountability of R, Bounded above sets, Bounded below sets, Bounded sets, Unbounded sets, Supremum and infimum of a set, The completeness and Archimedean property of $\mathbb{R}$	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on countable and uncountable sets, bounded and unbounded sets and supremum and infimum of sets.		
	Practical	N/A		
	Theory	Finite and infinite sets, Examples of countable and uncountable sets; Absolute value and the Real line, Bounded sets, Suprema and infima, The completeness property of $\mathbb{R}$, Archimedean property of $\mathbb{R}$	GE-IV IV Sem	Elements of Analysis
	Tutorial	Exercises and doubts based on finite and infinite sets, supremum and infimum of sets.		
	Practical	N/A		
	Practical	1. Complex numbers and their representations 2. Operations like addition, multiplication, division, modulus 3. Graphical representation of polar form.	B.Sc.(H) Mathematics I Semester	BMATH101 Calculus
FEBRUARY	**Theory**	Sequences and their limits, Convergent sequences, Limit theorems, Monotone sequences and their convergence, Subsequences, Cauchy sequence and convergence criterion; Infinite series and their convergence, Cauchy criterion for series.	B.A. (Prog) IV Sem	Analysis

	Tutorial	Exercises and doubts based on convergence and divergence of sequences using various results and/or tests.		
	Practical	N/A		
	Theory	Definition and a necessary condition for convergence of an infinite series, Geometric series, Cauchy convergence criterion for series; Positive term series, Integral test, Convergence of p-series, Comparison test, Limit comparison test, D'Alembert's ratio test, Cauchy's root test; Alternating series, Leibniz test; Absolute and conditional convergence.	GE-IV	Elements of Analysis
	Tutorial	Exercises and doubts based on convergence and divergence of series using various results and/or tests.		
	Practical	N/A		
	Practical	1. Matrix operations: addition, multiplication, inverse, transpose 2. Determinant, Rank, Eigenvectors, Eigenvalues of a Matrix	B.Sc.(H) Mathematics I Semester	BMATH101 Calculus
MARCH	**Theory**	Positive term series, Comparison tests, Absolute and conditional convergence, Cauchy's nth root test, D'Alembert's ratio test, Raabe's test, Alternating series, Leibnitz test.Limit of functions, Sequential criterion for limits, Algebra of limits, Continuous functions, Sequential criterion for continuity and discontinuity, Properties of continuous functions, Uniform continuity.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on convergence and divergence of series using various results and/or tests.		
	Practical	N/A		
	Assignment	Questions from the topics including Supremum and Infimum of sets, and sequences and series of real numbers. Limit and Continuity of functions.		

	Theory	Definition of power series, Radius and interval of convergence, Cauchy−Hadamard theorem, Statement and illustration of term-by-term differentiation,	GE-IV	Elements of Analysis
	Tutorial	Exercises based on convergence of power series and differentiation		
	Practical	N/A		
	Assignment	Questions from the topic including supremum and infimum of sets, convergence/divergence of sequences and series of real numbers and power series.		
	Practical	1. Find numbers between two real numbers and plotting of finite and infinite subset of $\mathbb{R}$ 2. Characteristic equation and verification of the Cayley−Hamilton theorem, Solving the systems of linear equations. Assignments related to above topics	B.Sc.(H) Mathematics I Semester	BMATH101 Calculus
April	**Theory**	Riemann integral, Integrability of continuous and monotonic functions.	B.A.(Prog) IV Sem	Analysis
	Tutorial	Exercises and doubts based on Riemann integration.		
	Practical	N/A		
	Theory	Integration of power series, and Abel's theorem, Power series expansions for e^x, sin x, cos x, log (1 + x) and their properties.	GE-IV IV Sem	Elements of Analysis
	Tutorial	Questions based on power series expansion and their convergence.		
	Practical	N/A		

	Practical	1. Computation of limit, Differentiation, Integration and sketching of vector-valued functions.	B.Sc.(H) Mathematics I Semester	BMATH101 Calculus

Amit Kumar

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Definition of Riemann integration, Inequalities for upper and lower Darboux sums. Necessary and sufficient conditions for the Riemann inerrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to upper, lower Darboux sum, and Riemann Integration.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory:	Tracing of curves in polar coordinates. Techniques of sketching conics: parabola, ellipse and hyperbola.	B.Sc(H) Maths Sem-I	Calculus
	Practicals	Introduction to Mathematica and Calculus Practical. (1) Plotting of graphs of function of type (greatest integer function)… (even and odd positive integer), (even and odd positive integer), (a positive integer) , , , Discuss the effect of and on the graph and to solve different	B.Sc(H) Maths Sem-I (A)	Calculus

Feb	**Theory**	Riemann integrability of monotone functions and continuous functions, Algebra and properties of Riemann integrable functions. Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, Intermediate value theorem for integrals. First and second fundamental theorems of integral calculus, and the integration by parts. Related	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to monotone functions and continuous functions, and piecewise continuous and piecewise monotone functions.	B.Sc(H) Maths Sem-IV B	BMATH409: Riemann Integration & Series of Functions
	Theory	Reflection properties of conics, Rotation of axes, Second degree equations and their classification into conics using the discriminant.	B.Sc(H) Maths Sem-I (A & B)	Linear Programming and theory of games
	Practicals	Plotting the graphs of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them. Discuss the observation of these function to solve different Questions	B.Sc(H) Maths Sem-I A	Calculus
	Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-IV/I	BMATH409: Riemann Integration & Series of Functions / Calculus

March				
	Theory	Improper integrals of Type-I, Type-II and mixed type. Definitions and examples of pointwise and uniformly convergent sequence of functions. Motivation for uniform convergence by giving examples, Theorem on the continuity of the limit function of a sequence of functions. The statement of the theorem on the interchange of the limit function and derivative, and its illustration with the help of examples, The interchange of the limit function and integrability of a sequence of functions.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tut	To discuss the doubt of students and various exercise questions and examples related to work done in class.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Theory	Unit tangent, Normal and binormal vectors, Curvature.	B.Sc(H) Maths Sem-1 (A & B)	Calculus
	Assignments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-IV A /I	BMATH409: Riemann Integration & Series of Functions/Calculus
	Practicals	Sketching parametric curves. Tracing of conics in Cartesian coordinates. Giving Assignment related to above topics. 5). Obtaining surface of revolution of curves. (6). Sketching ellipsoid, hyperboloid of one and two sheets,	B.Sc(H) Maths Sem-I A	Calculus

April	**Theory**	Pointwise and uniform convergence of series of functions, Theorems on the continuity, derivability and integrability of the sum function of a series of functions. Cauchy criterion for the uniform convergence of series of functions, and the Weierstrass M-test for uniform convergence. Definition of a power series, Radius of convergence, Absolute and uniform convergence of a power series. Differentiation and integration of power series, Statement of Abel's theorem and its illustration with the help of examples.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions
	Test	To take class test related to all syllabus.	B.Sc(H) Maths Sem-IV A	BMATH409: Riemann Integration & Series of Functions / Calculus

Dr. Nisha Bohra

Month		Topics	Course	Paper Name and code
January	Theory 1	Vector spaces, subspaces, Algebra of subspaces	B.Sc. (H) Mathematics II A	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Properties of Complex Numbers, Regions in Complex plane, Functions of Complex variable, Mappings, Differentiability, Cauchy- Riemann equations, Analytic function, Exponential function, Logarithmic function, Trigonometric function.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Practicals	19. Declaring a complex number and its graphical representation 20. Algebra of complex numbers. 21. To find conjugate, modulus and phase angle of an array of complex numbers.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III B and IIA	C13 and BMATH410
February	Theory 1	quotient spaces, linear combination of vectors, span of a set, linear dependence and linear independence of vectors	B.Sc. (H) Mathematics II A	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Derivatives of function, Definite Integrals of functions, Contours, Contour Integrals and its examples, Upper bounce for moduli of contour Integrals, Antiderivatives, Proof of Antiderivative Theorem, Cauchy-Goursat Theorem.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Practicals	22. To compute integral over straight line path between the two specified end points. 23. To perform contour integration 24. To plot the complex functions and analyze the graph	B.Sc. (H) Mathematics III B	Complex Analysis, C13

	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III B and IIA	C13 and BMATH410
March	Theory 1	Concept of basis and dimension, replacement theorem, dimension of subspaces, linear transformation: definition and examples, null space, range space, nullity, rank, dimension theorem.	B.Sc. (H) Mathematics II A	Ring Theory and Linear Algebra-I, BMATH410
	Theory 2	Cauchy Integral Formula, Extension of Cauchy Integral formula, Some consequences of the extension, Exercise problems. Liouville's theorem, Fundamental theorem of Algebra, Convergence of sequences and series. Taylor series and its examples, Laurent series and its examples, Absolute and Uniform convergence of power series.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Practicals	25. To obtain the Taylor series expansion of given function f(z) around given point z0. 26. To obtain how many terms should be used in the taylor series expansion of a given function to get a percentage error of less than 5%. 27. To compute the poles and corresponding residues of complex functions.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Tutorials	Doubts of students are discussed on the basis of topics covered in the class. Exercise questions are also discussed.	B.Sc. (H) Mathematics III B and IIA	C13 and BMATH410
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics II A and III B	Ring Theory and Linear Algebra-1 and Complex analysis
	Internal Test	Internal Exam will be conducted on the basis of topics covered in the class	B.Sc. (H) Mathematics II A and III B	Ring Theory and Linear Algebra-1 and Complex analysis

April	Theory 1	One- One and Onto Linear Transformations, Matrix representation of a Linear Transformation, Algebra of Linear Transformations, Isomorphisms, Invertibility and Isomorphisms, Change of Coordinate matrix	B.Sc. (H) Mathematics II A	Ring Theory and Linear Algebra-I, BMATH410
	Theory-2	Uniqueness of series representations of power series. Isolated singular point, Residues, Cauchy's Residue Theorem, Types of Isolated Singular point, Residues at poles, Definite Integrals Involving Sines and Cosines	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Practicals	28. To obtain Laurent series expansion of given function around given point. 29. To perform conformal mapping and bilinear transformations.	B.Sc. (H) Mathematics III B	Complex Analysis, C13

Mr. Sudhakar Yadav

Month		Topics	Course	Paper Code/Name
Jan	**Theory**	Vector spaces, Subspaces, Algebra of subspaces, Linear combination of vectors	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Vector spaces, Subspaces, Algebra of subspaces, Linear combination of vectors	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Theory:	Linear programming problem: Standard, Canonical and matrix forms, Graphical solution. Convex and polyhedral sets, Hyperplanes, Extreme points; Basic solutions, Basic feasible solutions; Reduction of any feasible solution to a basic feasible solution; Correspondence between basic, : Simplex Method: Optimal solution feasible solutions and extreme points.	B.Sc(H) Maths Sem-VI	Linear Programming and theory of games
	Tut	To discuss the doubt of students and various exercise questions and examples related to Linear programming problem: Standard, Canonical and matrix forms, Graphical solution. Convex and polyhedral sets, Hyper planes, Extreme points; Basic solutions, Basic feasible solutions; Reduction of any feasible solution to a basic feasible solution; Correspondence between basic feasible solutions and extreme points.	B.Sc(H) Maths Sem-VI	Linear programming and theory of games

	Practicals	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE. 3. Plot the integral surfaces of a given first order PDE with initial data.	B.Sc(H) Maths Sem-IV B	PDE
Feb	**Theory**	Linear span, Linear independence, Bases and dimension. Dimension of subspaces, Linear transformations, Null space, Range, Rank and nullity of a linear transformation.	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Tutorials	To discuss the doubt of students, various exercise questions, and examples related to Linear span, Linear independence, Bases and dimension. Dimension of subspaces, Linear transformations, Null space, Range, Rank and nullity of a linear transformation.	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Theory	Termination criteria for optimal solution of the linear programming problem, Unique and alternate optimal solutions, Unboundedness. Simplex algorithm and its tableau format. Artificial variables, Two-phase method, Big-M method.	B.Sc(H) Maths Sem-VI	Linear Programming and theory of games

Tut	To discuss the doubt of students, a various exercise questions, and examples related to Termination criteria for optimal solution of the linear programming problem, Unique and alternate optimal solutions, Unboundedness. Simplex algorithm and its tableau format. Artificial variables, Two-phase method, Big-M method.	B.Sc(H) Maths Sem-VI	Linear Programming and theory of games
Practicals	4. Solution of wave equation 5. Solution of one-dimensional heat equation	B.Sc(H) Maths Sem-IV B	PDE
Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-IVB/VI	Linear Programming and theory of games/PDE/ Ring Theory and Linear Algebra-I

March				
Theory	**Theory**	Matrix representation of a linear transformation, Algebra of linear transformations.	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Theory	To discuss the doubt of students, various exercise questions and examples related to Matrix representation of a linear transformation, Algebra of linear transformations.	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Theory	Motivation and formulation of dual problem; Primal-dual relationships, Statements of the fundamental theorem of duality and complimentary slackness theorem with examples.	B.Sc(H) Maths Sem-VI	Linear Programming and theory of games
	Tut	To discuss the doubt of students and various exercise questions and examples related to Motivation and formulation of dual problem; Primal-dual relationships, Statements of the fundamental theorem of duality and complimentary slackness theorem with examples.	B.Sc(H) Maths Sem-V A	C12- Group Theory-II
	Assignments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-III A/V B	C6- Group Theory-I / C12- Group Theory-II
	Practicals	6. Solving systems of ordinary differential equations. 7. Draw the sequence of functions on the given interval and discuss the point wise convergence:	B.Sc(H) Maths Sem-IVB	PDE

April	**Theory**	Isomorphisms, Isomorphism theorems, Invertibility and the change of coordinate matrix.	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Tutorials	To discuss the doubt of students, various exercise questions, and examples related Isomorphism's, Isomorphism theorems, Invariability and the change of coordinate matrix.	B.Sc(H) Maths Sem-IV B	BMATH410: Ring Theory and Linear Algebra-I
	Theory	Transportation problem, Assignment problem, Game Theory: Basic concept, Formulation and solution of two-person zero-sum games, Games with mixed strategies, Linear programming method of solving a game.	B.Sc(H) Maths Sem-VI	Linear Programming and theory of games
	Tut	To discuss the doubt of students, various exercise questions, and examples related to transportation problem, assignment problem, game theory: Basic concept, Formulation and solution of two-person zero-sum games, Games with mixed strategies, Linear programming method of solving a game.	B.Sc(H) Maths Sem-VI	Linear Programming and theory of games
	Practicals	Discuss the uniform convergence of sequence of functions	B.Sc(H) Maths Sem-IVB	PDE
	Test	To take internal test related to syllabus and internal lab test related to above practicals.	B.Sc(H) Maths Sem-IVB/VI	Linear Programming and theory of games/PDE/ Ring Theory and Linear Algebra-I

Dr. Rajni Arora

		Topics	Course	Paper Code/ Name
JANUARY	Theory 1	Sample space, probability axioms, real random variables (discrete and continuous), cumulative distribution function, probability mass/density functions , Mathematical expectation, moments, moment generating function, characteristic function	B.Sc.(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Theory 2	Equivalence relations, Functions, Composition of functions, Invertibility and inverseof functions, One-to-one correspondence and the cardinality of a set.Well ordering principle, The division algorithm in $\mathbb{Z}$, Divisibility and the Euclideanalgorithm, Modular arithmetic and basic properties of congruences.	B.Sc.(H) Mathematics Sem-I	BMATH102-Algebra
	Practical	Downloading and installing statistical software R, R as calculator, reading and getting data into R: combine and scan commands, viewing named objects and removing objects from R, types and structure of data items with their properties	B.Sc.(H) Mathematics Sem-IV	CAS and related softwares (SEC-II)
	Assignment 1	Assignment consisting of questions of topics covered in January to be submitted in second week of February	B.Sc.(H) Mathematics Sem-I	BMATH102-Algebra

		Topics	Course	Paper name
FEBRUARY	Theory 1	Discrete distributions: uniform, binomial, Poisson, geometric, negative binomial Continuous distributions: uniform, normal, exponential,Joint cumulative distribution function and its properties, joint probability density functions,Marginal distributions	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Theory 2	Statements of the fundamental theorem of arithmetic and principle of mathematical induction, Systems of linear equations, Row reduction and echelon forms, Vector equations, The matrix equation $A\mathbf{x} = b$, Solution sets of linear systems, The inverse of a matrix, Subspaces, Linear independence, Basis and dimension, The rank of a matrix and applications,Introduction to linear transformations, Matrix of a linear transformation; Applications tocomputer graphics.	B.Sc.(H) Mathematics Sem-I	BMATH102-Algebra
	Practical	Exercises based on R: manipulating vectors, data frames, matrices and lists, viewing objects within objects, constructing data objects and conversions, summary commands, stem and leaf plot, histogram, scatter plot, pairs plot, bar charts	Sem-IV	CAS and related softwares (SEC-II)
	Assignment 1	Assignment to be submitted by the end of mid semester break consisting of questions of topics covered in January and February	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Assignment 2	Assignment to be submitted by the end of mid semester break consisting of questions of topics covered in January and February	B.Sc(H) Mathematics Sem-IV	SEC-II

	Test	Test in third week of February of topics covered till date		

		Topics	Course	Paper name
MARCH	Theory 1	Conditional distributions, expectation of function of two random variables, Conditional expectations, independent random variables,bivariate normal distribution, correlation coefficient, joint moment generating function (jmgf) and calculation of covariance (from jmgf), linear regression for two variables,Chebyshev's inequality	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Theory 2	Eigenvalues and eigenvectors, The characteristic equation and Cayley-Hamilton theorem	B.Sc.(H) Mathematics Sem-I	BMATH102-Algebra
	Practical	Plotting in R: line charts, pie charts, box-whisker plots, Cleveland dot charts, bar charts, explore data and relations, saving graphs	Sem-IV	CAS and related softwares (SEC-II)
	Test 1	Test in third week of March of topics covered till date	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Test 2	Test in third week of March of topics covered till date	B.Sc(H) Mathematics Sem-IV	SEC-II

		Topics	Course	Paper name
APRIL	Theory 1	Statement and interpretation of (weak) law of large numbers and strong law of large numbers, Central Limit theorem for independent and identically distributed random variables with finite variance, Markov Chains, Chapman-Kolmogorov equations, classification of states and related problems	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Practical	Summary statistics for vectors, data frames, matrices and lists; summary tables.	Sem-IV	CAS and related softwares (SEC-II)

Dr. Shahna

Month		**Topics**	**Course**	**Paper Code/Name**

JANUARY	**Theory**	Polynomial rings over commutative rings, Division algorithm and consequences, Principal ideal domains, Factorization of polynomials, Reducibility tests, Irreducibility tests, Eisenstein criterion, Unique factorization in Z[x]	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebr a-II
	Theory	Bisection method, Secant method, Regula-Falsi method, Newton-Raphson method, Gaussian elimination method (with row pivoting), Gauss-Jordan method; Iterative methods: Jacobi method, Gauss-Seidel method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Numerical Methods (with Practicals)
	Practical	Bisection method, Secant method and Regula-Falsi method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons)	**GE-4**
	Assignment	Assignments to be given on each course.		
	Tutorials	Exercise questions related to above topics.	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebra-II

Month		**Topics**	**Course**	**Paper Code/Name**

FEBRUARY	**Theory**	Divisibility in integral domains, Irreducibles, Primes, Unique factorization domains, Euclidean domains. Dual spaces, Double dual, Dual basis, Transpose of a linear transformation and its matrix in the dual basis, Annihilators, Eigenspaces of linear operators	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebra-II
	Theory	Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory-Newton forward and backward difference interpolations, Piecewise polynomial interpolation (linear and	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Numerical Methods (with Practicals)
	Practical	Newton-Raphson method, Gaussian elimination method and Gauss-Jordan method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4**
	Assignment	Assignments to be given on each course		
	Tutorials	Exercise questions related to above topics.	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebra-II

Month		Topics	Course	Paper Code/Name
MARCH	**Theory**	Diagonalizability, Invariant subspaces and Cayley-Hamilton theorem; The minimal polynomial for a linear operator. Inner product spaces and norms, Gram-Schmidt orthogonalization process, Orthogonal complements, Bessel's inequality.	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebra-II
	Theory	Numerical differentiation: First and second order derivatives, Richardson extrapolation method; Numerical integration: Trapezoidal rule, Simpson's rule; Ordinary differential equation: Euler's method,	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	**GE-4** Numerical Methods (with Practicals)
	Practical	Jacobi method, Gauss-Seidel method, Lagrange interpolation and Newton interpolation	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	**GE-4**
	Assignment	Assignments to be given on each course		
	Tutorials	Exercise questions related to above topics.	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebra-II
	Test	To take internal lab test of the practicals		
	Test	To take internal test of above courses.		

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	The adjoint of a linear operator, Least squares approximation, Minimal solutions to systems of linear equations, Normal and Self-adjoint operators, Orthogonal Projections and Spectral theorem	B.Sc(H) Maths Sem-VI A	C14- Ring Theory and Linear Algebra-II
	Theory	Modified Euler's methods (Heun's and midpoint), Floating point representation and computer arithmetic, Significant digits; Errors: Roundoff error, Local truncation error, Global truncation error; Order of a method, Convergence and terminal Conditions	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Numerical Methods (with Practicals)
	Practical	Trapezoidal rule, Simpson's rule and Euler methods for solving first order initial value problems of ODE's.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4**
	Assignment	Assignments to be given on each course		
	Tutorials	Exercise questions related to above topics.	B.Sc(H) Maths Sem-VI A	**C14-** Ring Theory and Linear Algebra-II

Dr. Garima V. Arora

Month		Topics	Course	Paper Code/Name

JAN	**Theory**	Introduction, classification, construction and geometrical interpretation of 1st order PDE, method of characteristic and general solution, canonical forms, method of separation of variables	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
	Theory	Sample space, probability axioms, real random variables, cumulative distribution function, probability mass/density function, expectation, moments, moment generating function, characteristic function, uniform distribution, binomial and poisson distribution.	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics
	Practical	Practical 2- plotting the characteristics for 1st order pde	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
FEB	**Theory:**	Gravitational potential, conservation laws and Burger's equation, classification of 2nd order PDE, canonical forms, equations with constant coefficients, general solution, mathematical modeling of vibrating string, vibrating membrane	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
	Practical	Practical 1- Cauchy problem for 1st order PDE Practical 3- plotting the integral surfaces Practical 4- solution of wave equation	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
	Theory	characteristic function, uniform distribution, binomial and poisson distribution, Geometric distribution, negative binomial, continuous uniform, normal and exponential distributions, Joint CDF, Joint PDF, conditional distributions, expectation, conditional expectation	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics
	Tutorial	To discuss exercise questions and doubts with 3 batches	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics
MARCH	**Theory**:	Cauchy problem for 2nd order PDE, homogeneous wave equation, initial boundary value problem, non-homogeneous boundary conditions, finite strings with fixed ends, non-homogeneous wave equations, Goursat problem	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations

	Practical	Practical 5- Solution of 1-D heat equation Practical 6- solving ODE	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
	Theory	Independent random variable, bivariate normal distributions, correlation coefficient, joint mgf, covariance, linear regression	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics
	Tutorial	To discuss exercise questions and doubts with 3 batches	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics
APRIL	**Theory**:	Method of separation of variables for 2^{nd} order PDE, vibrating string problem and existence and uniqueness of its solution, heat conduction problem and existence and uniqueness of its solution, non-homogeneous problem	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
	Practical	Practical 7- pointwise convergence Practical 8- uniform convergence	B.Sc(H) Maths Sem-IV A	BMH408- Partial Differential Equations
	Tutorial	To discuss exercise questions and doubts with 3 batches	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics
	Theory	Chebyshev's inequality, weak and strong law of large numbers, central limit theorem, Markov chain, Chapman-Kolmogorov equations, classification of states.	B.Sc(H) Maths Sem-VI B	DSE-3(i)- Probability Theory and Statistics

Mr.Anirban Chatterjee

January	Theory	Transportation problem and its mathematical formulation, northwest-corner method, least cost method and Vogel approximation method for determination of starting basic feasible solution. Algorithm for solving transportation problem.	BA Prog Sem- VI	SEC-4/Transportation &Networkflow
	Practical	Transportation problem	BA Prog Sem- VI	SEC-4/Transportation

				&Networkflow
	Practical	Declaring a complex number and graphical representation. e.g.(i) Z1 =3 + 4i, Z2 = 4 – 7i (ii). Program to discuss the algebra of complex numbers. e.g., if Z1 =3 + 4i, Z2 = 4 – 7i, then find Z1 + Z2, Z1 - Z2, Z1 * Z2, and Z1 / Z2 (iii) To find conjugate, modulus and phase angle of an array of complex numbers. e.g., Z = [2+ 3i ,4-2i, 6+11i, 2-5i] To compute the integral over a straight line path between the two specified end points. e. g., $\int z^2$, $\int e^z$, $\int z$, $\int (z+2)^2$, etc where C is the straight line path from -1+ i to 2 - i.	B.Sc(H) Maths Sem-VIA	C13/Complex Analysis
February	Theory	Assignment problem and its mathematical formulation, Hungarian method for solving assignment problem, traveling salesperson problem.	BA Prog Sem- VI	SEC-4/Transportation &Networkflow
	Practical	To perform contour integration. e.g., (i) $\int (z^2-2z+1)$ where C is the Contour given by $x = y^2 + 1$; (ii) $\int (z+2)/z$ where C is the contour given by $y = e^x$ which can be Parameterized by x = cos (t), y = sin (t) To plot the complex functions and analyze the graph e.g., (i) f(z) = Z2 (ii) f(z)=Z3 (iii) $f(z) = (Z^4-1)^{1/4}$ To perform the Taylor series expansion of a given function f(z) around a given point z.The number of terms that should be used in the Taylor series expansion is given for each function. Hence plot the magnitude of the function and magnitude of its Taylors series expansion. e.g., (i) f(z) = exp(z) around z = 0, n =40. (ii) $f(z)=\exp(z^2)$ around z = 0, n = 160	B.Sc(H) Maths Sem-VIA	C13/Complex Analysis
	Practical	Assignment problem, traveling salesperson problem.	BA Prog Sem- VI	SEC-4/Transportation &Networkflow
March	Theory	Network models, minimum spanning tree algorithm, shortest-route problem, maximum flow model.	BA Prog Sem- VI	SEC-4/Transportation &Networkflow
	Practical	To determines how many terms should	B.Sc(H) Maths Sem-	C13/Complex Analysis

		be used in the Taylor series expansion of a given function f(z) around z = 0 for a specific value of z to get a percentage error of less than 5 %. e.g., For f(z) = exp(z) around z =0, execute and determine the number of necessary terms to get a percentage error of less than 5 % for the following values of z: (i) z = 30 + 30i (ii) z = 5 - 9i	VIA	
	Practical	Shortest-route problem, Minimum spanning tree algorithm, Maximum flow model.	BA Prog Sem- VI	SEC-4/Transportation &Networkflow
April	Practical	To perform Laurents series expansion of a given function f(z) around a given point z. e.g., (i) $f(z)= (\sin z -1)/z^4$ around z = 0 $f(z) = \cot (z)/z^4$ around z = 0. Etc. To compute the poles and residue of complex number. e.g.: $1/z$, $z^2/(z - 2)$, $z^3/(z - 2)^3$ etc. To perform Conformal Mapping and Bilinear Transformations.	B.Sc(H) Maths Sem-VIA	C13/Complex Analysis
	Practical	CPM and PERT calculations of exercises from the chapters 5 and 6 of [2]. [1] Case 9.1: Shipping Wood to Market, and Case 9.3: Project Pickings.	BA Prog Sem- VI	SEC-4/Transportation &Networkflow

Ms. Aanchal

Month		Topics	Course	Paper Name/Code
January	Theory	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Plotting functions of two variables using Plot3D and contour plot, Plotting parametric curves surfaces, Customising plots, Animating plots, Producing tables of values, Working with piecewise defined functions, Combining graphics.	B.Sc(H) Maths Sem-IVA	SEC-II
	Practicals	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Plotting functions of two variables using Plot3D and contour plot.	B.Sc(H) Maths Sem-IVA	SEC-II
February	Theory	Simple programming in a CAS, Working with matrices, Performing Gauss elimination, Operations (Transpose, Determinant, Inverse), Minors and cofactors, Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, Eigenvector and	B.Sc(H) Maths Sem-IVA	SEC-II

		diagonalization and revise all practicals.		
	Practicals	Plotting parametric curves surfaces, Customising plots, Animating plots, Producing tables of values, Working with piecewise defined functions, Combining graphics.	B.Sc(H) Maths Sem-IVA	SEC-II
	Test	To take class test related to syllabus and lab test related to above Practicals.		
	Assignment	To be given assignment related to syllabus.		
March	Theory	R as a calculator,Explore data and relationships in R, Reading and getting data into R, Combine and scan command, types and structure of data items with their properties, manipulating vectors, data frames, Matrices and lists, Viewing objects within objects, Constructing data objects and conversions.	B.Sc(H) Maths Sem-IVA	SEC-II
	Practicals	Simple programming in a CAS, Working with matrices, Performing Gauss elimination, Operations (Transpose, Determinant, Inverse), Minors and cofactors.	B.Sc(H) Maths Sem-IVA	SEC-II
	Test	To take class test related to syllabus and lab test related to above Practicals.		
	Assignment	To be given assignment related to syllabus.		
April	Theory	Summary commands, Summary statistics for vectors, data frames, Matrices and lists, Summary tables, Stem and leaf plot, Histograms, Plotting in R, Box whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts, and bar charts, copy and save graphics to other applications.	B.Sc(H) Maths Sem-IVA	SEC-II
	Practicals	Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, Eigenvector and diagonalization and revise all practicals.	B.Sc(H) Maths Sem-IVA	SEC-II

Dr. Mohd. Aquib

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Polynomial rings over commutative rings, Division algorithm and consequences, Principal ideal domains, Factorization of polynomials, Reducibility tests, Irreducibility tests, Eisenstein criterion, Unique factorization in Z[x]	B.Sc(H) Maths Sem-VI B	**C14-** Ring Theory-II
	Theory	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Plotting functions of two variables using Plot3D and ContourPlot, Plotting parametric curves surfaces	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares (Mathematica)
	Practical	[1] Chapter 12 (Exercises 1 to 4 and 8 to 12) Chapter 3 [Exercises 3.2 (1 and 2)]	B.Sc(H) Maths Sem-IV B	**SEC-2** (Mathematica)
	Theory	Bisection method, Secant method, Regula-Falsi method, Newton-Raphson method, Gaussian elimination method (with row pivoting), Gauss-Jordan method; Iterative methods: Jacobi method, Gauss-Seidel method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Numerical Methods (with Practicals)

	Practical	Bisection method, Secant method and Regula-Falsi method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	**GE-4**
	Assignment	Assignments to be given on each course		

Month		**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	Divisibility in integral domains, Irreducibles, Primes, Unique factorization domains, Euclidean domains. Dual spaces, Double dual, Dual basis, Transpose of a linear transformation and its matrix in the dual basis, Annihilators, Eigenspaces of linear operators	B.Sc(H) Maths Sem-VI B	**C14-** Ring Theory-II
	Theory	Customizing plots, Animating plots, Producing tables of values, working with piecewise defined functions, Combining graphics. Simple programming in a CAS	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares (Mathematica)
	Practical	Chapter 3 [Exercises 3.3 (1, 2 and 4), 3.4 (1 and 2), 3.5 (1 to 4), 3.6 (2 and 3)]	B.Sc(H) Maths Sem-IV B	**SEC-2** (Mathematica)
	Theory	Interpolation: Lagrange form, Newton form, Finite difference operators, Gregory-Newton forward and backward difference interpolations, Piecewise polynomial interpolation (linear and	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Numerical Methods (with Practicals)

	Practical	Newton-Raphson method, Gaussian elimination method and Gauss-Jordan method	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4**
	Assignment	Assignments to be given on each course		

Month		**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	Diagonalizability, Invariant subspaces and Cayley-Hamilton theorem; The minimal polynomial for a linear operator. Inner product spaces and norms, Gram-Schmidt orthogonalization process, Orthogonal complements, Bessel's inequality.	B.Sc(H) Maths Sem-VI B	**C14-** Ring Theory-II
	Theory	Working with matrices, Performing Gauss elimination, operations (transpose, determinant, inverse), Minors and cofactors, Working with large matrices	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares (Mathematica)
	Practical	[2] Chapter 6 (Exercises 6.2 and 6.3)	B.Sc(H) Maths Sem-IV B	**SEC-2** (Mathematica)
	Theory	Numerical differentiation: First and second order derivatives, Richardson extrapolation method; Numerical integration: Trapezoidal rule, Simpson's rule; Ordinary differential equation: Euler's method,	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	**GE-4** Numerical Methods (with Practicals)

	Practical	Jacobi method, Gauss-Seidel method, Lagrange interpolation and Newton interpolation	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Maths	**GE-4**
	Test	To take internal lab test of the practicals		
	Test	To take internal test of above courses		
	Assignment	Assignments to be given on each course		

Month		**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	The adjoint of a linear operator, Least squares approximation, Minimal solutions to systems of linear equations, Normal and Self-adjoint operators, Orthogonal Projections and Spectral theorem	B.Sc(H) Maths Sem-VI B	Ring Theory-II
	Theory	Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, eigenvector and diagonalization.	B.Sc(H) Maths Sem-IV B	**SEC-2** Computer Algebra Systems and Related Softwares (Mathematica)
	Practical	[2] Chapter 7 [Exercises 7.1 (1), 7.2, 7.3 (2), 7.4 (1) and 7.6]	B.Sc(H) Maths Sem-IV B	**SEC-2** (Mathematica)

	Theory	Modified Euler's methods (Heun's and midpoint), Floating point representation and computer arithmetic, Significant digits; Errors: Roundoff error, Local truncation error, Global truncation error; Order of a method, Convergence and terminal Conditions	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4** Numerical Methods (with Practicals)
	Practical	Trapezoidal rule, Simpson's rule and Euler methods for solving first order initial value problems of ODE's.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	**GE-4**
	Assignment	Assignments to be given on each course		

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE 2020-2021

Name of the Faculty: Dr Deepika Singh **Department: political science**

Semester : IV (Even)

Paper : POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	APPROACHES TO STUDYNING COMPARATIVE POLITICS; A. Political culture B. New institutionalism	B A HONOURS	**: POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE**
	Practicals			
	Tutorials	Discussion pn political culture		
FEBRUARY	**Theory:**	ELECTORAL SYSTEM; A)DEFINITIONS AND PROCEDURES; TYPES OF ELECTION SYSTEM (first past the post, proportional representation, mixed representation) Party system Historical context of emergence of the party system		
	Practicals:			
	Tutorials:			

	<u>Assignment:</u>	Approaches to the study of comparative politics

MARCH	**Theory:**	Nation state What is nation state? HISTORICAL EVOLUTION IN WESTERN EUROPE AND POST COLONIAL CONTEXT NATION AND STATE DEBATE DEMOCRATISATION: PROCESS OF DEMOCRATISATION,
	Practicals:	
	Tutorials:	Concept of nation State
	Test	Internal test
APRIL	**Theory:**	POST AUTHORITARIANISM AND POST COMMUNIST COUNTRIES FEDERALISM; HISTORICAL CONTEXT FEDERATION AND CONFEDERATION .
	Practicals:	
	Tutorials:	Discussion on Federalism

MAY	**Theory:**	DEBATES AROUND TERRITORIAL DIVISION

	Practicals:	
	Tutorials:	Discussion on territorial division

Semester : EVEN IV

Paper : INTRODUCTION TO INTERNATIONAL RELATIONS

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**APRROACHES TO INTERNATIONAL RELATIONS** **CLASSICAL REALISM** **NEO LIBERLAISM** **STRUCTURAL APPROACHES** **FEMINIST PERSPECTIVE**	B A PROG	**INTRODUCTION TO INTERNATIONAL RELATIONS**
	Practicals			
	Tutorials	DISCUSSION ON APPROACHES		

FEBRUARY	**Theory:**	**CONTINUE UNIT 1.**		
	Practicals:			
	Tutorials:	PRESENTATION ON VARIOUS APPRAOCHES TO THE STUDY OF INTERNATIONAL RELATONS		
	Assignment:	WHERE ARE WOMEN IN INTERNATIONAL POLITICS?		
MARCH	**Theory:**	COLD WAR AND POST COLD WAR ERA SECOND WORLD WAR AND ORIGIN OF COLD WAR PHASES OF COLD WAR RISE AND FALL OF DETENTE		
	Practicals:			
	Tutorials:	IMPACT OF COLD IN CONTEMPORARY INTERNATIONAL POLITICS		

	Test	Internal test
APRIL	**Theory:**	END OF COLD WAR AND COLLAPSE OF SOVIET UNION POST COLD WAR ERA
	Practicals:	
	Tutorials:	DISCUSSION ON EUROPEAN UNION AND MANY OTHER REGIONAL ORGANISATION AND THEIR SIGNIFICANCE

MAY	**Theory:**	INDIA'S FOREIGN POLICY BASIC DETERMINANTS INDIA'S POLICY OF NON-ALIGNMENT INDIA AS AN EMERGING POWER

	Practicals:	
	Tutorials:	REVISION

Name of the Faculty: Dr Deepika Singh : Department: political science

Semester : EVEN IV

PAPER: YOUR LAWS YOUR RIGHTS (SHARED PAPER)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**RULE OF LAW AND CRIMINAL JUSTICE SYSYTEM IN INDIA**	B A (H) SEC	**YOUR LAWS YOUR RIGHTS**
	Practicals			
	Tutorials	DISCUSSION ON RULE OF LAW		

FEBRUARY	**Theory:**	**CONTINUE UNIT 1**		
	Practicals:			
	Tutorials:	DISCUSSION ON CRIMINAL JUSTICE SYSYTEM IN INDIA		
	Assignment:	PRESENTATION ON RULE OF LAW		
MARCH	**Theory:**	EQALITY AND NON-DISCRIMINATION		
	Practicals:			
	Tutorials:			

	Test	Internal test
APRIL	**Theory:**	GENDER: THE PROTECTION OF WOMEN ANGAINST DOMESTIC VIOLENCE, RAPE AND SEXUAL HARRASEMENT
	Practicals:	
	Tutorials:	DISCUSSION ON VILOENCE AGAINST WOMEN

MAY	**Theory:**	CASTE: LAWS ABOLISHING UNTOUSHABILITY.
	Practicals:	
	Tutorials:	REVISION

DR DEEPIKA SINGH
ASSISTANT PROFESSOR
DEPARTMENT OF POLITICAL SCIENCE

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Amit Yadav (Adhoc-joined 2nd December 2020)
Department: Political Science

Semester : II/IV/VI(even sem)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Understanding Conflict; Conflict Management, Conflict Resolution.	BA(prog)	62323601/ Conflict and Peace Building
	Practicals			

	Tutorials			
FEBRUARY	**Theory:**	Conflict Transformation; Peace Building: Meaning and Concept	BA(prog)	62323601/ Conflict and Peace Building
	Practicals:			
	Tutorials:			

	Assignment:	Question assigned from above topics making up the internal assessment requirement		
MARCH	**Theory:**	Dimensions of Conflict- Ideology; Economic/Resource Sharing Conflicts	BA(prog)	62323601/ Conflict and Peace Building
	Practicals:			
	Tutorials:			

	Test			
APRIL	**Theory:**	Socio-Cultural Conflicts (Ethnic, Religious, Gender-based)	BA(prog)	62323601/ Conflict and Peace Building
		Political Parties and the Party System- National Parties and State Parties; Trends in the Party System: From the Congress System to Multi-Party Coalitions. Elections and Electoral Processes- Electoral Process, Representation and social determinants of voting behavior.	BA(H)	12321202/ Political Process in India
		Approaches to the Study of Indian Politics and Nature of the State in India: Liberal, Marxist and Gandhian. Indian Constitution: basic features, debates on Fundamental Rights and Directive Principles	BA(prog)	62321201/ Indian Government and Politics
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments		

MAY	**Theory:**	Election Commission and Electoral Reforms. Religion and Politics- Debates on Secularism and Communalism.	BA(H)	12321202/ Political Process in India
		Institutional Functioning: Prime Minister, Parliament and Judiciary. Power Structure in India: Caste, class and patriarchy.	BA(prog)	62321201/ Indian Government and Politics

		Relevance of political theory; nature and scope	BA(prog)	52321422/ Introduction to Political Theory
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
	Assignment:	Question assigned from above topics making up the internal assessment requirement		
JUNE	**Theory:**	Caste and Politics- Caste in Politics and the Politicisation of Caste; Intersectionality of Caste, Class and Gender, reservation and affirmative action policies.	BA(H)	12321202/ Political Process in India
		Religion and Politics: debates on secularism and communalism. Parties and Party systems in India.	BA(prog)	62321201/ Indian Government and Politics
		Citizenship- defining the concept, theories of citizenship and its critical analysis	BA(prog)	52321422/ Introduction to Political Theory
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
JULY	**Theory:**	Tribes and Politics- Policies and Challenges: Fifth and Sixth Schedules; Forest Rights Act; Development and Issues of Displacement. The Changing Nature of the Indian State Developmental, Welfare and Coercive Dimensions.	BA(H)	12321202/ Political Process in India
		Strategies of Development in India since Independence: Planned Economy and Neoliberalism. Social Movements: Workers, Peasants, Environmental and Women's Movement.	BA(prog)	62321201/ Indian Government and Politics

		Debates in Political Theory: Should the State intervene in the institution of the family?	BA(PRO)	52321422/ Introduction to Political Theory
	Practicals:			
	Tutorials:	Discussion around the above topics, revision of topics covered, focus on core areas, answering doubts and other information regarding answer writing with relevant examples and thought experiments		

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ashish Kumar Thakur (Adhoc-joined on 28th Sept. 2020)
Department: Political Science

Semester : II/IV/VI(even sem)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Course Objective:** The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. Unit XI: Lohia: Socialism • S. Sinha, (2010) 'Lohia's Socialism: An underdog's perspective'. • Kumar, (2010) 'Understanding Lohia's Political Sociology: Intersectionality of Caste, Class, Gender and Language Issue'	BA(H), Sem VI	12321602/Indian Political Thought-II
		Course objective: to explain the institutional aspects of democracy and how institutions function within a constitutional framework. **Unit 4:** Dynamics of Civil Society: New Social Movements and Various interests, Role of NGO's, Understanding the political significance of Media and Popular Culture. • Ghanshyam Shah [ed.], Social	B.A. (P), Sem VI	62327602/ Democracy and Governance

		Movements and The State • Su H. Lee, Debating New Social Movements: Culture, Identity, and Social Fragmentation • Mohanty, Manoranjan, Peoples Rights: Social Movements and the State in the Third World • S. Laurel Weldon ,When Protest Makes Policy : How Social Movements Represent Disadvantaged Groups • Saima Saeed, Screening the Public Sphere: Media and Democracy in India		
	Practicals			
	Tutorials			
FEBRUARY	**Theory:**	**Unit X**: Nehru: Secularism • R. Pillai, (1986) 'Political thought of Jawaharlal Nehru', in Th. Pantham, and K. Deutsch (eds.), Political Thought in Modem India • B. Zachariah, (2004) Nehru	BA(H), Sem VI	12321602/ Indian Political Thought-II
		Unit III: Contemporary Political Economy of Development in India: Policy Debates over Models of Development in India, Recent trends of Liberalisation of Indian Economy in different sectors, E-governance. • Paul Brass, Politics in India Since Independence • J.Dreze and A.Sen, India: Economic Development and Social Opportunity • Jagdish Bhagwati, India in Transition: Freeing The Economy • Joseph E. Stiglitz, Globalisation and its Discontents • Patel, I.G., Glimpses of Indian Economic Policy: An Insider View • Pankaj Sharma, E-Governance: The New Age Governance • Pippa Norris, Digital Divide: Civic Engagement, Information Poverty	B.A. (P), Sem VI	62327602/ Democracy and Governance

		and the Internet in Democratic Societies • Bidyut Chakrabarty, Public Administration: A Reader		
	Practicals:			
	Tutorials:			

MARCH	**Theory:**	**Unit VI:** Ambedkar: Social Justice • P. Chatterjee, (2005) 'Ambedkar and the Troubled times of Citizenship', in V. Mehta and Th. Pantham (eds.), Political ideas in modern India: Thematic Explorations. • Annihilation of Caste, Dr. B. R. Ambedkar **Unit V:** Gandhi: Swaraj • Parel, (ed.), (2002) 'Introduction', in Gandhi, freedom and Self Rule	BA(H), Sem VI	12321602/ Indian Political Thought-II

		Unit I: Structure and Process of Governance: Indian Model of Democracy, Parliament, Party Politics and Electoral behaviour, Federalism, The Supreme Court and Judicial Activism, Units of Local Governance (Grassroots Democracy) Political Communication -Nature,Forms and Importance • Atul Kohli (ed.), The Success of India's Democracy. • Kothari, Rajini, Politics in India. • Mackie, Gerry, Democracy Defended. • Paul Brass, Politics in India Since Independence.	B.A. (P), Sem VI	62327602/ Democracy and Governance
	Practicals:			
	Tutorials:	**Assignment:** Question assigned from above topics making up the internal assessment requirement.		

APRIL	**Theory:**	• Discussion
		  • Previous year questions
		  • Individual doubts
		  • Assignments
		• Revision
			BA(H), Sem VI	12321602/ Indian Political Thought-II

		Unit I: Structure and Process of Governance - Continued	B.A. (P), Sem VI	62327602/ Democracy and Governance
		Course Objective: to equip students with the tools of studying the political process in India by looking at the relationship between the components of the political system, the social and economic contexts in which they unfold, and the democratic values that they seek to achieve. **Unit III:** Religion and Politics Debates on Secularism and Communalism	B.A.(H), Sem II	12321202/ Political Process in India

		• T. Pantham, (2004) 'Understanding Indian Secularism: Learning from its Recent Critics'. • P.R. Brass, (2003) 'Introduction: Explaining Communal Violence', in The Production of Hindu- Muslim Violence in Contemporary India. • B. Chandra, (1999) 'Communalism as False Consciousness'. • R. Bhargava (ed). (1998), Secularism and Its Critics. • N. Chandhoke, (2010) 'Secularism', in P. Mehta and N. Jayal (eds.) The Oxford Companion to Politics in India		
		Course Objective: The objective of this generic elective paper is to make students from diverse background understand the process of globalization from a political perspective. **Unit I:** Concept of Globalization: Globalization debate; for and against. • J. Baylis, Smith and Owens, eds. (2017) The Globalization of World Politics: An Introduction to International Relations. • Manfred B. Steger (2017) Globalization: A Very Short Introduction. • Paul Hirst, G. Thompson and S. Bromley (2009), Globalization in Question. • Held, David and Anthony Mc grew (ed.), (2003), The Global Transformation Reader: An introduction to the Globalization Debate • David Held and Anthony McGrew, et.al (1999) Global Transformation: Politics, Economy and Culture. • Keohane Robert and Joseph S. Nye Jr. (Spring 2002), "Globalization: What is new, what is not".	B.A.(H) GE- Political Science, Sem II	12325907/ Politics of Globalization
	Practicals:			

	Tutorials:	• Discussion
		  • Previous year questions
		  • Individual doubts
		  • Assignments
		• Revision		

MAY	**Theory:**	**Unit III:** Religion and Politics Debates on Secularism and Communalism • Continued • P.R. Brass, (2003) 'Introduction: Explaining Communal Violence', in The Production of Hindu- Muslim Violence in Contemporary India. • Does the State Promote Communal Violence for Electoral Reasons?, ASHUTOSH VARSHNEY and JOSHUA R. GUBLER	B.A.(H), Sem II	12321202/ Political Process in India
		Unit IV: Issues in Globalization: Alternative Perspectives on its nature and character, critical dimensions: economic, political and cultural	B.A.(H) GE-Political Science, Sem II	12325907/ Politics of Globalization
		Course Objective: This course aims to introduce certain key aspects of conceptual analysis in political theory and the skills required to engage in debates surrounding the application of the concepts. **Unit I:** a. What is Politics? • Bhargava, R. and Acharya, A. (eds.) Political Theory: An Introduction. • McKinnon, C. (ed.) Issues in Political Theory.	B.Com.(P), Sem II	52321422/ Introduction to Political Theory
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		

	Assignment:			
JUNE	**Theory:**	**Unit IV: Caste and Politics** Caste in Politics and the Politicisation of Caste; Intersectionality of Caste, Class and Gender, reservation and affirmative action policies • R. Kothari, (1970) 'Introduction', in Caste in Indian Politics. • M. Weiner, (2001) 'The Struggle for Equality: Caste in Indian Politics'. • S. Deshpande (2016), 'Caste in and as Indian Democracy'. • C. Jaffrelot, (2005) 'The Politics of the OBCs'. • U. Chakravarti. (2003)'Caste and Gender in Contemporary India', in Gendering Caste Through a Feminist Lens.	B.A.(H), Sem II	12321202/ Political Process in India
		Unit V: Globalization and democracy: State, sovereignty and the civil society. **Unit VI:** Globalization and Politics in developing countries	B.A.(H) GE-Political Science, Sem II	12325907/ Politics of Globalization
		Unit II: Concepts: Democracy, Liberty, Equality, Justice, Rights 'Democracy', in R. Bhargava and A. Acharya - 'Democracy', in McKinnon, C. (ed), Issues in Political Theory. 'Liberty', I. Carter 'Justice', in R. Bhargava and A. Acharya 'Equality', in R. Bhargava and A. Acharya 'Rights', in R. Bhargava and A. Acharya	B.Com.(P), Sem II	52321422/ Introduction to Political Theory
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments. • Assignment		

JULY	**Theory:**	**Unit V:** Tribes and Politics Policies and Challenges: Fifth and Sixth Schedules; Forest Rights Act; Development and Issues of Displacement • Discussion	B.A.(H), Sem II	12321202/ Political Process in India
		Unit II: Approaches to understanding globalization: a) Liberal approach b) Radical approach **Unit III:** International Institutions/Regimes a) World Bank b) International Monetary Fund c) The World Trade Organization • Discussion **Unit VII:** The inevitability of globalization: Domestic and Global responses • **Assignment:** Debate on above topics making up the internal assessment requirement.	B.A.(H) GE-Political Science, Sem II	12325907/ Politics of Globalization
		Unit III: Debates in Political Theory: a. Is democracy compatible with economic growth? b. On what grounds is censorship justified and what are its limits? c. Does protective discrimination violate principles of fairness? • Freedom of Speech and the Question of Censorship', A. Sethi • 'Affirmative Action', in R. Bhargava and A. Acharya • 'Democracy', in R. Bhargava and A. Acharya	B.Com.(P), Sem II	52321422/ Introduction to Political Theory
	Practicals:			
	Tutorials:	• Discussion • Previous year questions • Revision		

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr Jita Mishra **Department: Political Science**

Semester : II/IV/VI Political Theory- Concepts and Debates

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Liberty- negative and positive	Ba Hons political science 1 year 11 term	PAPER111 2.1 Political Theory- Concepts and debates
	Practicals			
	Tutorials	Discussion J S mill on liberty		
FEBRUARY	**Theory:**	Equality		
	Practicals:			
	Tutorials:	Relationship between equality and liberty		

the

	Assignment :	Critically evaluate the negative concept of liberty,

MARCH	**Theory:**	Freedom , emancipation and swaraj Justice, Rawls
	Practicals:	
	Tutorials:	Swaraj Discussion on free speech
	Test	Critically evaluate Rawls theory of justice.
APRIL	**Theory:**	Feminist perspective of justice
	Practicals:	
	Tutorials:	Human rights

MAY	**Theory:**	Multiculturalism and Toleration

	Practicals:	
	Tutorials:	Affirmative action

SEMESTER WISE TEACHING
PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Jita Mishra **Department: Political Science**

Semester : II/IV/VI **India' s foreign policy in a globalizing world**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	India's foreign policy from a post colonial state to aspiring global power	Ba Hons political science 111 year sem-VI	6.3F India's foreign policy in a globalizing world
	Practicals			

	Tutorials	Objectives and principles		
FEBRUARY	**Theory:**	India' s relation with USA and USSR		
	Practicals:			
	Tutorials:	Discussion on Trump administration		

	<u>Assignment :</u>	Indo-US relations
MARCH	**Theory:**	South Asia debating regional strategies
	Practicals:	
	Tutorials:	India and Nepal and Bhutan

	Test	Indo-pak relations
APRIL	**Theory:**	India and China
	Practicals:	
	Tutorials:	Tibet and Indo China relations

MAY	**Theory:**	India s negotiating strategies, trade, environment and security regime India in a multipolar world
	Practicals:	WTO IMF
	Tutorials:	TRADE India as an emerging power

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January-June, 2017

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (P)-VIth

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Understand the issues concerning the rights of citizens, Conceptual dimensions, international trends on Human Rights, Social Inequality-Caste, Gender, Ethnicity and Class	B.A (P)	Human Rights, Gender and Environment
	Tutorials:	Understanding of socio – economic and political problems of marginalized groups in society such as women, dalits, minorities and adivasis		

February	**Theory:**	Globalisation and its impact on workers, peasants, dalits, adivasis and women, Human Rights: Various Meanings, UN Declarations and Covenants, Human Rights and Citizenship Rights	B.A (P)	Human Rights, Gender and Environment
	Tutorials:	Understand the impact of glibalisation-Economic, political and Social Human right in Globalisation		
March	**Theory:**	Human Rights and the Indian Constitution, Human Rights, Laws and Institutions in India-NHRC, Human Rights of Marginalized Groups: Dalits, Adivasis, Women, Minorities and Unorganized Workers, Consumer Rights, Human Rights Movement in India	B.A (P)	Human Rights, Gender and Environment
	Tutorials:	Human Rights and Constitutional Rights, UN and Human Rights, Consumers Rights Human Rights and Globalisation		
	<u>Assignment</u>	What do understand by the term 'social inequality'? Discuss the various forms of inequality in the form of class and gender on Human Rights What do you understand the term Patriarchy? Discuss the role and impact of patriarchy on Indian Society. Discuss the role and significant contributions of Universal Declaration on Human Rights.		

		Discuss the role of various institutions of India to protect the Women's right. What do you understand by the term Sustainable Development? Discuss the various initiative undertaken in the world.		
April	**Theory**	Analysing Structures of Patriarchy & Gender, Economic Development and Women, Women's Political Participation and Representation in India, Women's Rights in India, Women's Movements in India	B.A (P)	Human Rights, Gender and Environment
	Tutorials:	Women Institutions in India Women in Legislature Women in India		
	<u>Mid Term Test</u>	1. What is social inequality? discuss the impact and role of globalisation on social inequality. with especial reference to India. 2. Critically discuss the impact of globalisation on Indian social structure. 3. What do you understand by the term Globalisation. How are the forces of globalisation affecting the working class in the rural and urban India?		
		4. 'The Constitution of lndia upholds the tenets of Human Rights through various provisions enumerated in it' Discuss. 5. What do you understand by the term Sustainable Development? Discuss the various initiative undertaken in the world. 6. What are the provisions related to the protection of human rights in the Indian Constitution.		
May	**Theory:**	Environmental and Sustainable Development, UN Environment Programme: Rio, Johannesburg and	B.A (P)	Human Rights, Gender and

		after, Issues of Industrial Pollution, Global Warming and threats to Bio – diversity, Environment Policy in India, Environmental Movement in India		Environment
	Tutorials:	Human and Environment Change in the environment Environmental Rights		

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Rajan Jha (Adhoc-joined 2nd December 2020)
Department: Political Science

Semester : II/IV/VI(even sem)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Course Objective:** to enhance students' understanding on the meaning, nature and significance of peace, conflict management, conflict resolution and conflict transformation. Unit 3: Levels of Conflict • "Conflict: From Analysis to Intervention", S. Cheldelin, D. Druckman and L. Fast. • "The Sage Hand Book of Conflict Resolution", J. Bercovitch, V. Kremenyuk and I. Zartman. • D. Sandole, (2003) 'Typology' in S. Cheldelin, D. Druckman and L. Fast (eds.) Conflict: From Analysis to Intervention. • Local	BA(prog), Sem VI	62323601/ Conflict and Peace Building
		Course objective: Locating Gandhi in a global frame, the course seeks to elaborate Gandhian thought and examine its practical implications. Unit I: Gandhi on Modern Civilization and Ethics of Development a. Conception of Modern Civilisation and Alternative Modernity b. Critique of Development: Narmada Bachao Andolan - 'The Critique of Modernity', B. Parekh - 'Narmada Bachao Andolan', D. Hardiman - 'The Politics of the Andolan', A Baviskar	B.A. (H) GE- Political Science, Sem IV	12325904 /Gandhi and the Contemporary World

	Practicals			
	Tutorials			
FEBRUARY	**Theory:**	• Sub-National • International Unit 4: Conflict Responses: Skills And Techniques a. Negotiations: Trust Building • O. Ramsbotham, T. Woodhouse and H. Miall, (2011), 'Understanding Contemporary Conflict' in Contemporary Conflict Resolution. • 'Dynamics and Constraints In Negotiations In Internal Conflicts', W. Zartman.	BA(prog), Sem VI	62323601/ Conflict and Peace Building
		Unit II: Gandhian Thought: Theory and Action a. Theory of Satyagraha b. Satyagraha in Action i. Peasant Satyagraha: Kheda and the Idea of Trusteeship ii. Temple Entry and Critique of Caste iii. Social Harmony: 1947and Communal Unity	B.A. (H) GE- Political Science, Sem IV	12325904 /Gandhi and the Contemporary World
	Practicals:			
	Tutorials:			

	Assignment:	Question assigned from above topics making up the internal assessment requirement

MARCH	**Theory:**	b. Mediation: Skill Building; Active Listening • 'Timing Mediation Initiatives', I. Zartman and A. De Soto c. Track I, Track II & Multi Track Diplomacy • "Conducting Track II", H. Burgess and G. Burgess	BA(prog), Sem VI	62323601/ Conflict and Peace Building
		Unit III: Gandhi's Legacy a) Tolerance: Anti - Racism Movements (Anti - Apartheid and Martin Luther King) b) The Pacifist Movement c) Women's Movements d) Gandhigiri: Perceptions in Popular Culture - 'Gandhi's Global Legacy', D. Hardiman - 'Lage Raho Munna Bhai: Unravelling Brand 'Gandhigiri', A. Ghosh and T. Babu	B.A. (H) GE-Political Science, Sem IV	12325904 /Gandhi and the Contemporary World
	Practicals:			
	Tutorials:	Assignment: BA(prog), Sem VI Conflict and Peace Building		
APRIL	**Theory:**	d. Gandhian Methods • 'Peacebuilding and Non-Violence: Gandhi's Perspective on Power', M. Steger	BA(prog)	62323601/ Conflict and Peace Building
		Unit IV: Gandhi and the Idea of Political a) Swaraj b) Swadeshi - 'Editor's Introduction', in Gandhi, Hind Swaraj and Other Writings, A. Parel	B.A. (H) GE-Political Science, Sem IV	12325904 /Gandhi and the Contemporary World

		Course Objective: to help students learn how we make use of the basic normative concepts in political theory in organizing our social living. Unit I: Freedom a) Liberty: Negative and Positive b) Freedom, Emancipation, Swaraj Debate: Free speech, expression and dissent - 'Liberty', I. Carter - 'Freedom of Speech and the Question of Censorship', A. Sethi	B.A.(H), Sem II	12321201/ Political Theory- Concepts and Debates
	Practicals:			

	Tutorials:	• Discussion
		  • Previous year questions
		  • Assignment: B.A. (H) GE- Political Science, Sem IV Gandhi and the Contemporary World
		• Revision		

MAY	**Theory:**	Unit II: Equality a) Equality of opportunity and Equality of Outcome b) Egalitarianism: Background inequalities and differential treatment Debate: Affirmative action - 'Equality', in C. McKinnon - 'Affirmative Action', in R. Bhargava and A. Acharya	B.A.(H), Sem II	12321201/ Political Theory- Concepts and Debates
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
	Assignment:	Question assigned from above topics making up the internal assessment requirement		

JUNE	**Theory:**	Unit III: Justice a) Justice: Procedural and Substantive b) Rawls and his critics Debate: Scope of Justice – National vs Global - 'Justice', in R. Bhargava and A. Acharya Unit IV: Rights a) Rights: Natural, Moral and Legal b) Rights and Obligations Debate: Human Rights - Universalism or Cultural Relativism - 'Rights', in R. Bhargava and A. Acharya	B.A.(H), Sem II	12321201/ Political Theory-Concepts and Debates
	Practicals:			
	Tutorials:	Discussion around the above topics, answering doubts and other information regarding answer writing with relevant examples and thought experiments.		
JULY	**Theory:**	Unit V: Democracy a) Democracy: Idea and Practice b) Liberal Democracy and its critics c) Multiculturalism and Toleration - 'Democracy', in R. Bhargava and A. Acharya - 'Democracy', in McKinnon, C. (ed), Issues in Political Theory.	B.A.(H), Sem II	12321201/ Political Theory-Concepts and Debates
	Practicals:			

	Tutorials:	• Discussion
		  • Previous year questions
		  • Assignment: B.A.(H), Sem II Political Theory-Concepts and Debates
		• Revision		

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January-June, 2021

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (H)-IVth

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Global vs International Global Economy Anchors of Global Political Economy	B.A (H)	Global Politics-X
	Tutorials:	Global Politics vs International Politics vs International Relations		
February	**Theory:**	Bretton Woods Institutions- IMF, World Bank, WTO Role and Impact on Global Politics TNC & MNC	B.A (H)	Global Politics-X
	Tutorials:	Bretton Woods Institutions-Power and Politics Economic Anchors		
March	**Theory:**	Ecological Issues: Historical Overview of International Environmental Agreements	B.A (H)	Global Politics-X

	Assignment			
April	**Theory**	Climate Change, Global Commons Debate South -South North-South G-77 G-8 NAM	B.A (H)	Global Politics-X
	Tutorials:	Politics of Climate Change, Developed vs Developing, Role and Impact,		
	Mid Term Test	Globalisation has changed the nature of state in respect to its sovereignty and territory' Evaluate 'Globalisation has strengthened the role of developed countries and weakened the developing and underdeveloped countries' Examine		
		Critically examine the role of WTO in the light of global politics. 'IMF and IBRD is playing important role in global politics' discuss		
May	**Theory:**	Proliferation of nuclear weapons	B.A (H)	Global Politics-X
	Tutorials:	Nuclear weapon and Security Peace, Security and War		

	Mid Term Test	What is Global Commons debate? Examine the ecological issues in global politics with reference to Global Commons debate. Do you think that the initiatives and steps taken by the United Nations to protect the environment are sufficient? Give your arguments with examples		

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January-June, 2020

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (H)-VIth

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Understanding modern political philosophy Theory vs Philosophy, Science vs Philosophy Modernity and Its Discourses	B.A (H)	Modern Political Philosophy/Paper XIII
		Knowledge vs Ideas Forms vs Ideas Metaphysics		
	Tutorials:	Relationship between science and Philosophy. Political Science as Science Political Science and Philosophy		

February	**Theory:**	Rousseau's Philosophy-State, Social Contract, General Will, Government Rousseau as Modern Thinker		Modern Political Philosophy/Paper XVII
	Tutorials:	State birth Vs Contractarian Thinkers Rousseau as a Thinker Comparison between Hobbes, Locke and Rousseau. Social Contract in Philosophy		
March	**Theory:**	Mary Wollstonecraft and Feminism, On Rousseau's Education, Rights, Women and paternalism		Modern Political Philosophy/Paper XVII
	Tutorials:	Mary Wollstonecraft's contributions in the modern political philosophy. Mary as Feminist Thinker, Mary and Mill		
	<u>Assignment</u>	Critically examine the contributions of Immanuel Kant in the Enlightenment tradition in modern political philosophy. What is 'Modernity'? Examine the role of the enlightenment tradition in enriching the modern political philosophy		
April	**Theory**	J S Mill on Representative Government Liberty, Expression and Women. Marx Philosophy, State, Class, Revolution, Marx and Modernity, Marx and Science,		Modern Political Philosophy/Paper XVII

	Tutorials:	Where there is no common power, there is no law where no law, there is no justice (Hobbes). In the light of this discuss Hobbes's The theory of Social Contract as developed by Hobbes has its own problems. What main problems do you see in it?		
	<u>Mid Term Test</u>	Why is Karl Marx regarded as the founder of scientific socialism? Would you describe him as evolutionary or revolutionary socialist?		
		Rousseau's theory of General Will "is a strange mixture of utopian idealism and plain common sense." Discuss Rousseau's political philosophy was so vogue that it could hardly be said to point in any specific direction' (Sabine). How Far do you agree with it?		
May	**Theory:**	Alexandra Kollontai Bolshevik Feminism, Woman Question, Social Democracy and the Women's Question, Lonely Struggle of the Woman who defied Lenin ,		Modern Political Philosophy/Paper XVII
	Tutorials:	Discuss the views of J S Mill for securing Individual liberty in modern state. Is it correct to say that he was prophet of an empty liberty? What are the dangers of representative government, according to J S Mill? What safeguards against these dangers does he prescribe? "Rousseau's political philosophy was so		

		vague that it could hardly be said to point in any specific direction" (Sabine). How far do you agree with it? "I found the Hegelian dialectics standing on its head. I put it down on its feet" (Karl Marx). Critically examine the statement, Did Karl Marx succeed in his attempt? Critically analyse the 'Women's Question' in Alexandra Kollontai's philosophy		

SEMESTER WISE TEACHING PLAN (2019-2020)
SRI VENKATESWARA COLLEGE
Even Semester

Name of the Faculty: Dr. Vikash Kumar **Department: Political Science**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY, 2021	**Theory**	public opinion, conceptions and characteristics, uses for opinion poll Idea and Institution of Public Policy:	BA (P)- Political Science 4th Semester BA (P)- Political Science 6th Semester	1.Public Opinion and Survey Research (12323902) 2.Democracy and Governance (62327602)
	Practicals	NA		
	Tutorials	Discuss with students	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
FEBRUARY,2021	**Theory:**	Measuring Public Opinion with Surveys: Sampling design and Survey Research: Interview and Questionnaire Policy design and Institutions of Policy making	BA (P)- Political Science 4th Semester BA (P)- Political Science 6th Semester	1.Public Opinion and Survey Research (12323902) 2.Democracy and Governance (62327602)
	Practicals:	NA		
	Tutorials:	Questions and Answer session	BA (P)- Political Science 4th Semester	Public Opinion and Survey Research (12323902)

	Assignment:	What is Survey Research? Discuss different type and form of Interview.	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
MARCH, 2021	**Theory:**	Quantitative Data Analysis: Prediction, descriptive statistics Regulatory Institutions	BA (P)- Political Science 4th Semester BA (P)- Political Science 6th Semester	1.Public Opinion and Survey Research (12323902) Democracy and Governance (62327602)
	Practicals:			
	Tutorials:	Discuss with students	BA (P)- Political Science 4th Semester	1.Public Opinion and Survey Research (12323902)
	Test	What is Sampling? How to select sample during election survey. What is Public Policy? Evaluate the role of Institutions in the making of Public Policy.	BA (P)- Political Science 4th Semester BA (P)- Political Science 6th Semester	1.Public Opinion and Survey Research (12323902) 2.Democracy and Governance (62327602)
APRIL, 2021	**Theory:**	Interpreting polls: Prediction in polling research and politics Lobbying Institutions Approaches to the Study of Indian Politics and Nature of the State Equality: Equality of Oppurtunity	BA (P)- Political Science 4th Semester BA (P)- Political Science 6th Semester BA (P)- Political Science 2nd Semester BA (P)- Political Science 2nd Semester	1.Public Opinion and Survey Research (12323902) 2.Democracy and Governance (62327602) 3.Indian Govt. and Politics (62321201) 4.Political Theory: Concepts and Debate (2321202)
	Practicals:			
	Tutorials:	Questions and Answers Session		1.Public Opinion and Survey Research (12323902) 2.Democracy and Governance (62327602)

MAY	**Theory:**	Indian Constitution: Fundamental Right and Directive principals and Prime Minister, Parliament and Judiciary and Caste, class and patriarchy Equality of Outcome and What is Egalitarianism	BA (P)- Political Science 2nd Semester BA (P)- Political Science 2nd Semester	1.Indian Govt. and Politics (62321201) 2.Political Theory: Concepts and Debate (2321202)
	Practicals:	NA		
	Tutorials:	Discuss with students	BA (P)- Political Science 2nd Semester	1.Indian Govt. and Politics (62321201)
	Assignment	Discuss the features of Indian constitution. To what extent does the Preamble reflect these features? How to distinction between the Negative and Positive Liberty? Give reasons for your Answer.	BA (P)- Political Science 2nd Semester BA (P)- Political Science 2nd Semester	1.Indian Govt. and Politics (62321201) 2.Political Theory: Concepts and Debate (2321202)
JUNE, 2021	**Theory:**	secularism and communalism, Political Parties in India, Planned Economy and Neoliberalism Affirmative action and Democracy	BA (P)- Political Science 2nd Semester BA (P)- Political Science 2nd Semester	1.Indian Govt. and Politics (62321201) 2.Political Theory: Concepts and Debate (2321202)
	Practicals:	NA		
	Tutorials:			
	Test	Compare the Liberal and the Marxist views on the nature of Indian State.	BA (P)- Political Science 2nd Semester	1.Indian Govt. and Politics (62321201)

JULY, 2021	**Theory:**	Social Movements: Workers, Peasants, Environmental and Women movement Liberal Democracy. Multiculturism and Representation vs Participation	BA (P)- Political Science 2nd Semester BA (P)- Political Science 2nd Semester	1.Indian Govt. and Politics (62321201) 2.Political Theory: Concepts and Debate (2321202)
	Practicals:	NA		
	Tutorials:			

SEMESTER WISE TEACHING
PLAN (2019-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Namita Pandey **Department:** Political Science

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Globalisation - Concepts and Perspectives: Understanding globalisation and its alternative perspectives with reference to hyperglobalists, skeptics and transformational debate. Political: Debates on Sovereignty and Territoriality	BA(Hons) Pol. Sc. 4th Semester	Global Politics
	Practicals			
	Tutorials	Discussion on Robert Keohane, Susan Strange, Concept of Sovereignty		
FEBRUARY	**Theory:**	Culture and technological dimensions: Culture and Globalisation with reference to convergence, differentiation and diffusion of culture Globalisation and Technology: Technological Facilitation of Globalization and its impact. Global Resistance Movement: A) Global Social Movement B)NGO's		
	Practicals:			

	Tutorials:	Discussion on Samuel Huntington's Clash of Civilization and Benjamin Barber's Article on Mcworld vs Jihad		

	Assignment:	Define Globalisation; Discuss Alternative perspectives of Globalization
MARCH	**Theory:**	Contemporary Global Issues Proliferation of Nuclear Weapons International Terrorism, Non-State Actors and State Terrorism; Post 9-11 developments
	Practicals:	
	Tutorials:	Discussion of Non Proliferation Treaty and its impact.
	Test	Discuss the concept of Political with special reference to debates of Sovereignty & Territoriality Critically examine the working of the WTO Write an Essay on Global Social Movements
APRIL	**Theory:**	Migration: Definition and nature of international migration Human Security - Difference between traditional and human security; Components of Human Security
	Practicals:	

	Tutorials:	Presentation on Food Insecurity in India

MAY	**Theory:**	Globalization: Power & Resource Governance
	Practicals:	
	Tutorials:	Discussion on Major Shifts in the nature of power and governance post 1990

SEMESTER WISE TEACHING PLAN (2020-2021)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shakuntala Meena **Department: Sanskrit**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	UNIT I: LAGHUSIDDHĀNTA KAUMUDĪ : SAÑJÑĀ PRAKARAṆA	B.A. 2ND YEAR (P)	DSC-4 SANSKRIT GRAMMER
		UNIT 1: INTRODUCTION TO INDIAN MEDICINE SYSTEM : AYURVEDA	B.A. 2ND YEAR (H)	GE-4 BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM
	Tutorials	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
FEBRUARY	**Theory:**	UNIT II : SANDHI PRAKARAṆA UNIT III: SANDHI PRAKARAṆA	B.A. 2ND YEAR (P)	DSC-4 SANSKRIT GRAMMER
		UNIT III: SANDHI VISARGA SANDHI UTVA,LOPA,SATVA, RUTVA	B.A. 2ND YEAR (P)	MIL-B2 GRAMMER & COMPOSITION

		UNIT II : EIGHT BRANCHES OF AYURVEDA	B.A. 2ND YEAR (H)	GE-4 BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM
		UNIT V: ANALYSIS OF SELECTED CLASSICAL METER AND THEIR MUSICAL RENDERING (BHUJANGAPRAYĀTA, SRAGVINĪ,TTAKA)	B.A. 3RD YEAR (P)	GE-3 SANSKRIT METER & MUSIC
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	Assignment :	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS		
MARCH	**Theory:**	UNIT IV:SANDHI PRAKARAṆA UNIT V: VIBHAKTYARTHA PRAKARAṆA	B.A. 2ND YEAR (P)	DSC-4 SANSKRIT GRAMMER
		UNIT IV: SAMĀSA	B.A. 2ND YEAR (P)	MIL-B2 GRAMMER & COMPOSITION
		UNIT III : LIFESTYLE AND PREVENTIVE MEDICINE AND DIAGNOSIS OF ILLNESS UNIT IV: BASIC	B.A. 2ND YEAR (H)	GE-4 BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM

		PRINCIPLES OF AYURVEDIC PHARMACOLOGY		
		UNIT V: ANALYSIS OF SELECTED CLASSICAL METER AND THEIR MUSICAL RENDERING (HARIGĪTIKĀ,VIDYUNMĀLĀ,ANUSTUP)	B.A. 3RD YEAR (P)	GE-3 SANSKRIT METER & MUSIC
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	Test	TESTS WILL BE TAKEN TIMELY		

APRIL	**Theory:**	UNIT VI: GENERAL INTRODUCTION TO SAMASA BASED ON LAGHUSIDDHĀNTA KAUMUDĪ	B.A. 2ND YEAR (P)	DSC-4 SANSKRIT GRAMMER
		UNIT IV: SAMĀSA	B.A. 2ND YEAR (P)	MIL-B2 GRAMMER & COMPOSITION
		UNIT V: PRINCIPLES OF TREATMENT AND PANCHAKARMA THERAPY UNIT VI:	B.A. 2ND YEAR (H)	GE-4 BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM

		IMPORTANT MEDICINAL PLANTS IN AYURVEDA		
		UNIT VI: ANALYSIS OF SELECTED CLASSICAL METER AND THEIR MUSICAL RENDERING (ĀRYĀ,MĀLINĪ, ŚIKHARIĪ, VASANTATILAKĀ, MANDĀKRĀNTĀ, SRAGDHARĀ AND NYUŚĀRDŪLVIKRĪITA)	B.A. 3RD YEAR (P)	GE-3 SANSKRIT METER & MUSIC
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

SEMESTER WISE TEACHING PLAN
(2020-2021)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Atal **Department: Sanskrit**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	INTRODUCTION OF AYURVEDA	B.A.3rd YEAR (H) DSE	FUNDAMENTALS OF AYURVEDA
FEBRUARY	**Theory:**	CARAKASARHITA UNIT-1	B.A.3rd YEAR (H) DSE	FUNDAMENTALS OF AYURVEDA
		UNIT-5	B.A.2YEAR (P)	GRAMMAR AND COMPOSITION
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

	Assignment :	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS		
	Test	TESTS WILL BE TAKEN TIMELY		
MARCH		CARAKASARHITA UNIT-2 SUTRA-STHANAM	B.A.3rd YEAR (H) DSE	FUNDAMENTALS OF AYURVEDA
		UNIT-6	B.A.2YEAR (P)	GRAMMAR AND COMPOSITION
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
APRIL	**Theory:**	TAITTIRIYOPANISAD	B.A.3rd YEAR (H) DSE	FUNDAMENTALS OF AYURVEDA
		SECTION-A INDIVIDUAL	B.A. 1st YEAR	INDIVIDUAL,FAMILY AND COMMUNITY IN INDIAN SOCIAL THOUGHT

	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

SEMESTER WISE TEACHING PLAN
(2020-2021)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kanwar Singh **Department: Sanskrit**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	UNIT I: MAHAKAVYA AND CHARITAKAVYA	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT I: VIBHAKTYARTHA, VOICE AND KRT	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
		UNIT I: ACH SANDHI	B.A. 2ND YEAR (P)	MIL-B2 52131415 GRAMMAR AND COMPOSITION
	Tutorials	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
FEBRUARY	**Theory:**	UNIT II: GADYA AND RUPAKA	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT II: SELECTIONS FROM KRT PRAKARANA	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION

		UNIT I: ACH SANDHI	B.A. 2ND YEAR (P)	MIL-B2 52131415 GRAMMAR AND COMPOSITION
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

	Assignment :	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
MARCH	**Theory:**	UNIT III: GITIKAVYA UNIT IV: OTHER GENRES	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT III: TRANSLATION AND COMMUNICATION UNIT IV:	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
		UNIT II: HAL SANDHI	B.A. 2ND YEAR (P)	MIL-B2 52131415 GRAMMAR AND COMPOSITION
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	Test	TESTS WILL BE TAKEN TIMELY.		
APRIL	**Theory:**	UNIT V AND VI:GENERAL SURVEY	B.A. 2ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT V: ESSAY (TRADITIONAL SUBJECTS) UNIT VI: ESSAY	B.A. 3RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION

		UNIT II: HAL SANDHI	B.A. 2ND YEAR (P)	MIL-B2 52131415 GRAMMAR AND COMPOSITION
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr M PADMA SURESH

Department: ECONOMICS **Semester : IV , 2020-21**

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JANUARY	**Theory**	Data Types and Sources. Nature of research –Ch 1,2, 4, 5,6, 13 Ranjit Kumar(RK)-Ch 3(Flick) Discussion on how to choose a research topic and data sources like mospi, data.gov.in, etc.	BA PROG SEC-Economics	Research Methodology 62273426 LOCF-PS41
FEBRUARY	**Theory**	Questionnaire design and sampling techniques. Approaches to research and research strategy-Ch 7,8,9,10,12 of RK,Cochran-Ch1,2,5,8-relevant sections. Submission of research proposal.		

MARCH	**Theory**	Processing of survey data, analysing data. Sample selection:Ch 11,15,16,17 of RK Conduct of Practice internal test on Ch 1-8 of RK. Discussion of research proposals.		
APRIL	**Theory**	Ethics and scientific integrity. Writing Project Report-Ch 14,15,16.17 of RK Submission of Project/Research Report		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. M PADMA SURESH

Department: ECONOMICS **Semester : IV /2020-21**

MONTH		TOPICS	COURSE	PAPER CODE/NAME

JANUARY	**Theory**	Nature and scope of econometrics. Ch 1 of Gujarati. Review of Statistics. Simple linear regression-two variable case- Estimation-OLS, Testing of hypothesis, Gauss Markov Theorem. Forecasting, Scaling and units. Devore Ch 7 &9. Ch.2,3, Appendix D of Gujarati and Ch. 2 of Dougherty	BA(Hons)	Introductory Econometrics 12271403 LOCF-HC43
	Tutorials	Problems from Gujarati and Devore and Dougherty. Question papers problems.		
FEBRUARY	**Theory:**	Multiple Regression. Functional forms and qualitative explanatory variables-Ch4.5.6 of DG and Ch3, 5 of Dougherty Introduction to GRETL for project work		
	Tutorials:	End chapter questions from Gujarati, Dougherty and question papers		
MARCH	**Theory:**	Violations of Classical OLS assumptions- Multicollinearity. Heteroscedasticity and Autocorrelation. Ch 8,9 of DG,		
		Using GRETL for Project work. Conduct of internal test.		
	Tutorials:	End chapter questions from Gujarati, Dougherty		

APRIL	**Theory:**	Violations of Classical OLS assumptions-contd.- Autocorrelation. Model Misspecification & Tests for Specification. Ch10 and 7 of DG and Ch.12 and Ch. 6 of Dougherty. Submission of Project Work.		
	Tutorials:	End chapter exercises from Gujarati & Dougherty and revision from previous question papers.		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Aruna Rao

Department: Economics **Semester : II**

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	Unit 1	B.A (Prog)	Principles of Microeconomics II
	Practicals			
	Tutorials	Assignment on unit 1		

MAY	**Theory:**	Unit 1 & 2	B.A (Prog)	Principles of Microeconomics II
	Practicals:			
	Tutorials:	Assignment on unit 1 & 2		
	Assignment :			
JUNE	**Theory:**	Unit 2 & 3	B.A (Prog)	Principles of Microeconomics II
	Practicals:			
	Tutorials:	Assignment on unit 2 & 3		
	Test	Internal Assessment 1		
JULY	**Theory:**	Unit 3 & 4	B.A (Prog)	Principles of Microeconomics II
	Practicals:			
	Tutorials:	Assignment on unit 3 & 4		

	Test :	Internal Assessment 02		
AUGUST	**Theory:**	Unit 4	B.A (Prog)	Principles of Microeconomics II
	Practicals:			
	Tutorials:	Assignment on unit 4		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: KRISHNAKUMAR S (2020-21)

Department: ECONOMICS **Semester : II/IV/VI**

Month		Topics	Course	Paper Code/Name

JANUARY	**Theory**	Introduction to the Growth Theory. Neoclassical Solow model and its assumptions. Golden Rule Law of Accumulation. Harrod-Domar model and the instability problem	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals			
	Tutorials	Assignments on neoclassical Solow growth model from Mankiw workbook		
FEBRUARY	**Theory:**	Economic Growth in the Jones-Roemer framework. Economics of ideas, technological change. Math modeling of the same. Open Economy macroeconomics. Uncovered and Covered Interest Parity .	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals:			
	Tutorials:	Economics Growth tutorials and tests . some new readings		
MARCH	**Theory:**	Foreign Exchange Markets. Spot, Forward and Futures. Arbitrage and speculation.	BA(Hons) Sem IV	Intermediate Macroeconomics-II
		Fiscal and monetary policies under fixed and flexible exchange rate regimes.		
	Practicals:			
	Tutorials:	Problems on inter-temporal approach. Discussion of some articles.		
	<u>Assignment :</u>	Test based on Economic growth		

APRIL	**Theory:**	Fiscal and Monetary Policy Debt stabilization . Taylors interest rate setting rule.	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals:			
	Tutorials:	Problems on debt stabilization , Taylor's rule		
	Test			
May	**Theory:**	Economics of ideas. Schools of Macroeconomics. Miscellaneous. Revision	BA(Hons) Sem IV	Intermediate Macroeconomics-II
	Practicals:			

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: KRISHNAKUMAR S

Department: ECONOMICS **Semester : II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	IS-LM Analysis: Derivations of the IS and LM functions; IS-LM and aggregate demand; shifts in the AD curve	BA Programme Sem IV	Principles of Macroeconomics-II
	Practicals			
	Tutorials	IS LM Analytics with problems		
FEBRUARY	**Theory:**	GDP and Price Level in Short Run and Long Run: Aggregate demand and aggregate supply; multiplier analysis with AD curve and changes in price levels; aggregate supply in the SR and LR	BA Programme Sem IV	Principles of Macroeconomics-II
	Practicals:			
	Tutorials:	More of IS LM numericals		
MARCH	**Theory:**	Inflation and Unemployment: Concept of inflation; determinants of inflation; relationship between inflation and unemployment: Phillips Curve in short run and long run	BA Programme Sem IV	Principles of Macroeconomics-II
	Tutorials:	AD AS , Phillips curve discussion		
	Assignment :			
APRIL	**Theory:**	Balance of Payments and Exchange Rate: Balance of payments: current account and capital account; market for foreign exchange; determination of exchange rate	BA Programme Sem IV	Principles of Macroeconomics-II

	Tutorials:			
	Test			
May	**Theory:**	Discussion over Contemporary Economic Issues. Doubts based on Newspaper articles	BA Programme Sem IV	Principles of Macroeconomics-II
	Tutorials:			

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: BRAHMAREDDY D

Department: ECONOMICS **Semester: II&IV AY 2021-22**

Month		Topics	Course	Paper Code/Name
APRIL JANUARY	**Theory**	I. Introduction to Macroeconomics & National Income Accounting II. Money	B.A. (H)-I Economics B.A. (H)-III	Introductory Macroeconomics Money & Financial
	Tutorials	1. Introduction to National Income Accounting 2. Money Project Discussion	B.A. (H)-I Economics B.A. (H)-III Economics	Introductory Macroeconomics Money & Financial Markets
MAY FEBRUARY	**Theory:**	I. Money II. Inflation Topic 2 Financial Institutions, Markets, Instruments And Financial Innovations: a) Role of Financial Markets and Institutions; problems of asymmetric information – adverse selection and moral hazard, financial crisis b) Money and Capital Markets; Organization, Structure and Reforms in India: Role of Financial	B.A. (H)-I Economics B.A. (H)-III Economics	Introductory Macroeconomics Money & Financial Markets

	Tutorials:	I. Money II. Inflation Test: 6th March 2017	B.A. (H)-I Economics	Introductory Macroeconomics
JUNE MARCH	**Theory:**	I. Inflation II. Closed Economy in the Short-run TOPIC 3 INTEREST RATES: Determination, Sources of interest rates differentials, Theories of term structure of interest rates ; interest rates in India	B.A. (H)-I Economics B.A. (H)-III Economics	Introductory Macroeconomics Money & Financial Markets
	Tutorials:	I. Closed Economy Models II.	B.A. (H)-I Economics	Introductory Macroeconomics
	TEST: Project	25th March		
JULY APRIL	**Theory:**	I. Closed Economy in the Short-run II. TOPIC 4 BANKING SYSTEM: a) Balance Sheet and Portfolio Management b) Indian Banking System. Changing Role and Structure, Banking Sector Reforms	B.A. (H)-I Economics B.A. (H)-III Economics	Introductory Macroeconomics Money &Financial Markets
	Tutorials:	I. Closed Economy in the Short-Run II. Project Discussion	B.A. (H)-I Economics B.A. (H)-III Economics	Introductory Macroeconomics Contemporary Economic Issues
	Test **Project Presentation**	8th April 2021 12-20th April	B.A. (H)-I Economics B.A. (H)-III	Introductory Macroeconomics Contemporary Economic Issues

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: N. KALITHASAMMAL

Department: Economics ***SEMESTER-VI***

Month		Topics	Course	Paper Name/
JANUARY	**Theory**	Industrial performance 2000-2008, India development report is going to teach.	**B.A (P) III YR**	**INDIAN ECONOMY PART II**
	Tutorials	The basic educational trend and development and the problems of migrated people in India discussed elaborately.		
FEBRUARY	**Theory:**	Macro economic performances and policies are going to teach through Uma kapila and Shankar Acharya.		
	Tutorials:	Two different groups of students going to give paper presentation, on state wise industrial performances.		

MARCH	**Theory:**	Labour market and its legislation, and unemployment is going to explain,		
	Tutorials:	.key policy issues of agriculture and the reasons are going to discuss.		
	<u>Assignment</u>	One test and group paper presentations are going to conduct through online according to the GIVEN SCHEDULE.		
APRIL, MAY	**Theory:**	Industrial growth and its performance are going to teach in detail.Covid-19 impact on Indian economy by Radhika Kapoor is going to teach.		
	Tutorials:	Industrially oriented states and its performance and multitude of labour Laws are going to discuss.		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: N.KALITHASAMMAL

Department: Economics ***Semester-IV***

Month		Topics	Course	Paper Name/
JAN-2020-21	**Theory**	.Macroeconomics over view of India, the growth story is discussed with the view of India development report, Covid-19 impact on Indian economy by Radhika Kapoor is going to teach.	**GE-II YEAR**	**INDIAN ECONOMY PART II**
	Tutorials	The basic educational trend and development and the problems of migrated people in India discussed elaborately.		
FEB	**Theory:**	Agricultural growth in India since 1991, going to teach through RBI DEAP study		
	Tutorials:	Reasons for the failure of agriculture growth is going to explain and the reasons are pointing out clearly.		

MARCH	**Theory:**	LABOUR MARKET AND ITS LEGISLATION, AND UNEMPLOYMENT IS GOING TO EXPLAIN,		
	Tutorials:	Inequwality and concentration of income is going to explain with some inclusive ideas.		
	<u>Assignment</u>	**One test and group presetation are** going to conduct according to the given schedule.		
APRIL,MAY	**Theory:**	Financial sector, policy frame work is going to take, structural changes are going to explain.		
	Tutorials:	Major features and savings and investmentrelated questions going to work out.		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Meenakshi Sharma

Department: ECONOMICS **COURSE: Intermediate Microeconomics II**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Market Structure**: Monopoly Price discrimination and regulation, Two part tariff. Welfare comparison with perfect competition. Synder& Nicholson **Game Theory** Strategic form game with perfect information; Mixed strategy, Extensive form games, Weak & strict dominance. Synder& Nicholson and Osborne.	B.A (H), Economics Semester IV	Intermediate Microeconomics II
	Tutorials	Market Structure (Monopoly) and Game Theory.	B.A (H), Economics Semester IV	Intermediate Microeconomics II

FEBRUARY	**Theory:**	**Game Theory contd.. Imperfect competition**; Bertrand, Cournot and Stackelberg models; Price leadership; Hotelling's beach model. Synder& Nicholson **General equilibrium** in pure exchange and production; Fundamental welfare theorems and their implications. Hal.R. Varain & Synder& Nicholson.	B.A (H), Economics Semester IV	Intermediate Microeconomics II
	Tutorials:	Imperfect competition and Exchange	B.A (H), Economics Semester IV	Intermediate Microeconomics II
MARCH	**Theory:**	**Welfare**: Social welfare functions, Arrow's Impossibility Theorem, Paradox of voting, Median Voter Theorem.	B.A (H), Economics Semester IV	Intermediate Microeconomics II
		Externality: Consumption& production externality, Property Rights and Coase Theorem, Tragedy of Commons. Hal.R. Varain	B.A (H), Economics Semester IV	Intermediate Microeconomics II
	Tutorials:	Welfare and Externality.	B.A (H), Economics Semester IV	Intermediate Microeconomics II
	<u>Test 1:</u>	Test-I Monopoly and Game Theory.	B.A (H), Economics Semester IV	
APRIL	**Theory:**	**Public Goods**: definition & classification, efficiency criteria, free riding problem. Hal.R. Varain **Asymmetric Information**: Market for lemons, Moral hazard, separating and pooling	B.A (H), Economics Semester IV	Intermediate Microeconomics II
	Tutorials:	Public Goods and Asymmetric Information.	B.A (H), Economics Semester IV	Intermediate Microeconomics II

	Test 2	Exchange and Welfare	B.A (H), Economics Semester IV	Intermediate Microeconomics II

Semester: IV, Course GE: Introductory Macroeconomics

Month		Topics	Course	Paper
April	**Theory**	Introduction to Macroeconomics and National Income Accounting Basic issues studied in macroeconomics; measurements of gross domestic product, income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for open economy, balance of payments accounts, current and capital accounts.	GE, Semester IV	Introductory Macroeconomics
	Tutorials	Overview of Fiscal Functions	GE, Semester IV	Introductory Macroeconomics
May	**Theory:**	Unit 2. Money Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy. Unit 3. Inflation Inflation and its costs; hyperinflation. (i) Mankiw: Chapter 5, sections 5.2-5.7 (pp. 99-100; pp. 107-126). (ii) Blanchard: Chapter 23. (iii) Economic Survey 2017-18 Volume 2, chapter 4:	GE, Semester IV	Introductory Macroeconomics
	Tutorials:	Money and Inflation	GE, Semester IV	Introductory Macroeconomics
	Test 1	Introduction to Macroeconomics and National Income Accounting, Money and Inflation.	GE, Semester IV	Introductory Macroeconomics

June	**Theory:**	Some Discussion 1.Partha Ray (2013) Monetary Policy Oxford India Short Introduction. Chapter 1. What is Monetary Policy? pp. 31-45. (v) 2. Pulapre Balakrishnan: The perils of RBI's fixation on inflation," The Hindu (January 17, 2020) 3. Partha Sen: "Urjit Patel Committee Report-Flawed Premise, Misplaced Prescription," The Hindu (July 26, 2016) Unit 4. The Closed Economy in the Short Run; (i) Froyen: Chapter 2 and 3	GE, Semester IV	Introductory Macroeconomics
	Tutorials:	Classical and Keynesian systems; simple Keynesian model of income determination;	GE, Semester IV	Introductory Macroeconomics
July	**Theory:**	The Closed Economy in the Short Run Classical and Keynesian systems; simple Keynesian model of income determination; IS-LM model; fiscal and monetary multipliers. Dornbusch, Fischer and Startz: Chapters 9, 10, and chapter 11.1-11.3 (pp. 250 - 271).	GE, Semester IV	Introductory Macroeconomics
	Tutorials:	The Keynesian Model IS-LM curves	GE, Semester IV	Introductory Macroeconomics
	Test II	Elementary Theories of Product and Factor Taxation and Working of Monetary and Fiscal Policies.	GE, Semester IV	Introductory Macroeconomics

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ankit Joshi

Department: Economics **Semester: II (2020-21)**

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	**Unit- 1: Introduction to Macroeconomics and National Income Accounting**	General Elective for Hons.	Introductory Macroeconomics (GE)
	Practicals	-		
	Tutorials	Unit- 1: Introduction to Macroeconomics and National Income Accounting		
MAY	**Theory:**	**Unit- 2: Money** (Mankiw: Section 4.1; Section 5.1) **Unit- 3: Inflation** (Mankiw: Section 5.2- 5.7) **Unit- 4: Closed Economy in**	General Elective for Hons.	Introductory Macroeconomics (GE)
	Practicals:			

	Tutorials:	**Unit- 2: Money** (Mankiw: Section 4.1; Section 5.1) **Unit- 3: Inflation**		

	<u>Assignment:</u>	Presentation on contemporary topics in economics		
JUNE	**Theory:**	**Unit- 4: Closed Economy in Short Run** (Dornbush: Chapter 11.1-11.3; Froyen: Chapter 2 & 3;	General Elective for Hons.	Introductory Macroeconomics (GE)
	Practicals:			
	Tutorials:	**Unit- 4: Closed Economy in Short Run** (Dornbush: Chapter 9, 10, 11.1- 11.3)		
	Test:	**Unit- 2: Money** (Mankiw: Section 4.1; Section 5.1) **Unit- 3: Inflation** (Mankiw: Section 5.2- 5.7) **Unit- 4: Closed Economy in**		
JULY	**Theory:**	**Unit- 2: Money** (Blanchard: Chapter 4) **Unit – 3: Inflation** (Blanchard: Chapter 23; Partha Ray: Chapter 1	General Elective for Hons.	Introductory Macroeconomics (GE)
	Practicals:			
	Tutorials:	**Unit- 4: Closed Economy in Short Run** Mankiw: Chapter 3, 10 **Unit- 2: Money** (Blanchard: Chapter 4) **Unit – 3: Inflation** (Blanchard: Chapter 23;		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: ANKIT JOSHI

Department: ECONOMICS **Semester: VI (2020-21)**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 1(a): Deterministic Cash Flow Streams David G Luenberger, Chapter	B.A. (Hons.) Economics	Financial Economics
	Practicals			
	Tutorials	Suggested problem set of Chapter 2, 3 & 4		
FEBRUARY	**Theory:**	Unit 1(b): Single Period Cash Flows David G Luenberger, Chapter 6 Unit 1(c): CAPM	B.A. (Hons.) Economics	Financial Economics
	Practicals:			

	Tutorials:	Suggested problem set of Chapter 6 & 7		

	<u>Assignment :</u>	Test: Unit-1		
MARCH	**Theory:**	Unit 2: Options & Derivatives Basu & Hull, Chapter 2, 3, 5, 9 & 10	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Suggested problem set of Chapter 2, 3, 5, 9 & 10, 11 Discussion on contemporary		
	<u>Test</u>	Test: Unit-2, chapters 2, 3, 5, 9 & 10		
APRIL	**Theory:**	Unit 2: Options & Derivatives Basu & Hull, Chapter 6, 12 Unit 3: Corporate Finance	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Discussion of past years		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Jitesh Rana

Department: Economics **Semester VI, BA.(H) Economics**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Debraj Ray: Ch9 and Ch10 (sections 10.2 and 10.3, excluding 10.3.5)	B.A. Hons Economics	12271602: Development Economics -II
	Tutorials	Student doubts and Past year questions from the topics covered.		
FEBRUARY	**Theory:**	Debraj Ray: Ch 11,Ch 12 (Sections 12.1,12.2 & 12.3), Ch 13 (excluding section 13.5) and Ch14.	B.A. Hons Economics	12271602: Development Economics -II
	Tutorials:	Student doubts and Past year questions from the topics covered.		
	Test 1:	All topics of first 2 units.		
MARCH	**Theory:**	AVSI Ch7, Meier and Rauch Ch10 (Sections 10.1 & 10.5), Kolstad Ch1 & Ch11, Banerjee Benabou and Mookerjee Ch 6 & 7.	B.A. Hons Economics	12271602: Development Economics -II

	Tutorials:	Student doubts and Past year questions from the topics covered.		
	<u>Test 2:</u>	All topics of unit 4 and covered topics of unit 5.		
APRIL	**Theory:**	Dani Rodrik Ch4, Raghuram Rajan: Fault Lines (Introduction to the book), Ostrom Ch1.	B.A. Hons Economics	12271602: Development Economics -II
	Tutorials:	Student doubts and Past year questions from the topics covered. Preparation for OBE exams.		

Semester II, Generic Elective

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	Abel Bernanke and Croushore: Ch1 & 2. Mankiw Ch4 Section 4.1.	Generic Elective	12275201: Introductory Macroeconomics
	Tutorials	Student doubts and Past year questions from the topics covered.		
MAY	**Theory:**	Froyen Ch4 Section 4.1, Blanchard Ch4. Mankiw Ch4 sections 4.2-4.8. (Note: Classes were suspended from 04-05-21 to 16-05-21 due to sudden increase in COVID cases nationwide)	Generic Elective	12275201: Introductory Macroeconomics
	Tutorials:	Student doubts and Past year questions from the topics covered.		
	Test 1:	All topics of first 2 units.		
JUNE	**Theory:**	Blanchard Ch23. Froyen Ch3. Ch4(Sections 4.2.-4.4) Dornbusch and Fischer Ch3 and 4.	Generic Elective	12275201: Introductory Macroeconomics
	Tutorials:	Student doubts and Past year questions from the topics covered.		
	Test 2:	All topics of unit 3 and covered topics of unit 4.		

JULY	**Theory:**	Dornbusch and Fischer Ch5 (Section 5.1-5.3).Remaining portions from Blanchard Ch23. Classes were held online.	Generic Elective	12275201: Introductory Macroeconomics
	Tutorials:	Student doubts and Past year questions from the topics covered.		
MAY	**Theory:**	Revision through online classes.	B.A. Hons Economics	12271602: Development Economics -II
	Tutorials:	Student doubts and Past year questions from the topics covered. Preparation for OBE exams. (Note: It was announced that OBE exams won't be held for Sem II students.)		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Amit Kumar Jha

Department: ECONOMICS **SEM: VI, B.com(Program)**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Topic 1: Introduction, what is macroeconomics? Macroeconomic isuues in an economy Case & Fair ch 18	**B.com (Program)**	Principles of Macroeconomics **G.E.**
	Tutorials	Last year papers, students doubts		
FEBRUARY	**Theory:**	Topic 2: National income accounting Case & Fair ch 19	**B.com (Program)**	Principles of Macroeconomics **G.E.**
	Tutorials:	Last year papers, students doubts		
MARCH	**Theory:**	Topic 3: Determination of GDP Topic 4: national income determination with government and in an open economy Case & Fair ch 20	**B.com (Program)**	Principles of Macroeconomics **G.E.**
	Tutorials:	Last year papers, students doubts		
	<u>Test 1:</u>	On above topics		
APRIL	**Theory:**	Topic 5: money in the modern Economy Case & Fair ch 23, 24	**B.com (Program)**	Principles of Macroeconomics **G.E.**

	Tutorials/ Presentation	Last year papers, students doubts		

Semester: IV, Course GE: Public Finance

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Overview of Fiscal functions, Tools of Normative Analysis, Pareto Efficiency, Equity and the Social Welfare. R.A. Musgrave and P.B. Musgrave , Public Finance in Theory and Practice, 5th Edition, Chapter 1 2. Harvey Rosen (2005), Public Finance, Chapter 3 (pp 33 to 46)	BA(Hons)	Public Finance **G.E.**
	Tutorials	Last year question Paper, Student doubts		
FEBRUARY	**Theory:**	Market Failure, Public Goods and Externalities. 1. Joseph E. Stiglitz, Economics of the Public Sector, 3rd Edition, Chapter 4. 2. 2.John Cullis and Philip Jones (1998), Public Finance and Public Choice, Chapter 3 (sec.- 3.1, 3.2 and 3.3) 3. Harvey Rosen (2005): Public Finance, Chapter – 5	BA(Hons)	Public Finance **G.E.**
	Tutorials:			
	Test 1	Above topics		

MARCH	**Theory:**	Elementary Theories of Product and Factor Taxation (Excess Burden and Incidence) R.A. Musgrave and P.B. Musgrave , Public Finance in Theory and Practice, 5th Edition, Chapter 14 (pp 234-242), Chapter – 15 (pp 249-256 only part A and B). Working of Monetary and Fiscal Policies Case and Fair, Principles of Economics, 10th	BA(Hons)	Public Finance **G.E.**
	Tutorials:	Last year question Paper,		
APRIL	**Theory:**	ISSUES FROM INDIAN PUBLIC FINANCE. Current Issues of India's Fiscal and Monetary Policies. Goods and Services Tax, Fiscal Federalism in India, State and	BA(Hons)	Public Finance **G.E.**
	Tutorials/ Presentation	ISSUES FROM INDIAN PUBLIC FINANCE.		

SEM: VI, B.A.(Program)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Topic 1: Historical overview a. bipin chandra " the colonial legacy" Jean Dreaze and Amartya sen" an uncertain glory: india	**B.A.(Program)**	**The Indian Economy since1947 (G.E.)**
	Tutorials	Last year papers, students doubts		
FEBRUARY	**Theory:**	Topic 2 : growth and structural change Jean Dreaze and Amartya sen" an uncertain glory: india and its contradiction, ch 2 g. omkarnath" liberlisation and growth" ch 7	**B.A.(Program)**	**The Indian Economy since1947 (G.E.)**
	Tutorials:	Last year papers, students doubts		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Yogita Yadav

Department: Economics **Semester : VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Macroeconomic Policies & their impact	B.A (H) Economics	12271601 / Indian Economy II
	Practicals			

	Tutorials	Doubts on covered syllabus		
FEBRUARY	**Theory:**	1. Macroeconomic Policies & their impact 2. Policies and performance in Agriculture	B.A (H) Economics	12271601 / Indian Economy II
	Practicals:			
	Tutorials:	Doubts on covered syllabus		

MARCH	**Theory:**	1. Policies & performance in Industries	B.A (H) Economics	12271601 / Indian Economy II
	Practicals:			
	Tutorials:	Doubts on covered syllabus		
	<u>Test</u>	Internal Assessment 1 on Unit 1 & 2		
APRIL	**Theory:**	1. Policies & performance in industries 2. Trends & performance in Services	B.A (H) Economics	12271601 / Indian Economy II
	Practicals:			
	Tutorials:	Doubts on covered syllabus		
	Test :	Internal Assessment 2 on Unit 3 & 4		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Yogita Yadav

Department: Economics **Semester : IV**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Overview of Fiscal Functions, Tools of Normative Analysis, Pareto Efficiency, Equity and the Social Welfare	Hons Courses from Science, Commerce & Humanities	12275403 / Public Finance
	Practicals			
	Tutorials	Doubts and Numerical on covered syllabus		
FEBRUARY	**Theory:**	1. Market failure, Public goods & externalities 2. Elementary theories of Product & Factor Taxation	Hons Courses from Science, Commerce & Humanities	12275403 / Public Finance
	Practicals:			

	Tutorials:	Doubts and Numerical on covered syllabus		

MARCH	**Theory:**	1. Working of Fiscal & Monetary Policies 2. Current Issues of India's tax system	Hons Courses from Science, Commerce & Humanities	12275403 / Public Finance
	Practicals:			
	Tutorials:	Doubts and Numerical on covered syllabus		
	<u>Test</u>	Internal Assessment 1 on Unit 1		
APRIL	**Theory:**	1. Analysis of Budget & Deficit 2. Fiscal Federalism in India 3. State & local Finances	Hons Courses from Science, Commerce & Humanities	12275403 / Public Finance
	Practicals:			
	Tutorials:	Doubts and Numerical on covered syllabus		
	Test :	Internal Assessment 2 on Unit 2 (Covered till the day)		

SEMESTER WISE TEACHING PLAN (2020-21)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Yogita Yadav

Department: Economics **Semester : IV**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Using Secondary Data	B.A (H) Economics	Research Methodology
	Practicals			
	Tutorials	Finalising Research Topics		
FEBRUARY	**Theory:**	1. Using Primary data 2. Sample selection methods	B.A (H) Economics	Research Methodology

	Practicals:			
	Tutorials:	Doubts on Research Paper		

MARCH	**Theory:**	1. Analysing Data	B.A (H) Economics	Research Methodology
	Practicals:			
	Tutorials:	Doubts on Research Paper		
APRIL	**Theory:**	1. Writing Project report - Referencing Styles	B.A (H) Economics	Research Methodology
	Practicals:			
	Tutorials:	Doubts on Research Paper		
	Test :	Research Paper Presentations		

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Rajbir Kaur

Department: History

Semester: IV, VI

Month		Topics	Course	Paper Code/ Name
JANUARY	**Theory:**	I. India in the mid-18th century: society, economy, polity and culture	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		I. Understanding Popular Culture: Some Issues	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
	Tutorials:	Introducing the course and its themes.		
		Discussion		
FEBRUARY	**Theory:**	II. Dynamics of colonial expansion: indigenous states and Company power III. Colonial state and ideology: emergence of the Company State	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		II. Some Aspects of Popular Culture in India (a) Religion and everyday practice (b) Performative Traditions	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
	Tutorials:	Discussion with the tutorial groups on the topics already taken up in the lectures		
	<u>Assignment:</u>	How have studies of regional economies and societies altered our understanding of the eighteenth century in India?	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		Group Projects on themes of Popular Culture with field work assigned to students.	B.A. (Prog.) IIIrd Year	SEC – Popular Culture

MARCH	**Theory:**	IV. Law and education V. Economy and Society	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		II. Some Aspects of Popular Culture in India (c) Food Cultures (d) Making of a new *'Public'*	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
	Tutorials:	Discussion with regard to specific readings given for study		
		Discussion group for Hindi medium students		
	<u>Mid Term Test:</u>	Second Assignment Question given to students along with presentations	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
APRIL	**Theory:**	VI. Early 19th Century: Reforms and Revival VII. Popular resistance	B.A. (Hons.) IInd Year	Core - History of India – VI (c.1750-1857)
		Project presentations	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
	Tutorials:	Revision of the courses Discussion on previous year's question papers		

SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

January-April, 2021 for Sem IV

January-April, (revised academic calendar April to July 2021 for SEM II)

Name of the Faculty: Dr. Ningmuanching

Department: History

Semester: II/ IV

Month		**Topics**	**Course**	**Paper Code/Name**
January	**Theory:**	Struture of inequalities: caste, normative and historical experience	B.A Hons. Generic Elective	Inequality and Difference
	Tutorials:			
February	**Theory:**	Race, Tribe and Colonial knowledge Gender and Household	B.A Hons. Generic Elective	Inequality and Difference
	Tutorials:	Q and A	B.A Hons. Generic Elective	Inequality and Difference
March	**Theory:**	Gender and the Public Sphere Forms of Bondage, Ganikas, slavery and servitude	B.A Hons. Generic Elective	Inequality and Difference
	Assignment	Written assignment submission on gender and the household	B.A Hons. Generic Elective	Inequality and Difference
		Internal Test on selected themes like Caste, Class, Race and Colonial Knowledge, Tribes	B.A Hons. Generic Elective	Inequality and Difference
April	**Theory**	Social Distancing and Exclusion; Untouchability Equality and the Indian Constitution	B.A Hons. Generic Elective	Inequality and Difference

	Tutorials:	Discussions	B.A Hons. Generic Elective	Inequality and Difference
		Ancient Greece and Rome (subtopics a and b) Evolution of the polis, Conflict of the Orders and The Augustan Experiment	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
May	**Theory**	Slavery in Ancient Greece and Rome, Culture and Religion in Ancient Greece and Rome	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
	Tutorial	Q and A	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
June		Feudal Societies in Medieval Europe (8th to 14th Centuries)	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
	Tutorial	Q and A	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
	Assignment	Assignment on Political Evolution in Greece	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
July		Early Islamic Societies in West Asia: Transition from Tribe to State The Prophet and the Ummah The Caliphate under the Ummayads and the Abbasids Adab	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
		Quiz on selected topic	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World

	Assignment	Nature of the Caliphate	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World

SEMESTER WISE TEACHING PLAN (2020-21)
SRI VENKATESWARA COLLEGE
April- August 2021 for 2nd Semester
January-April 2021 for V1 Semester

Name of the Faculty: NUTI NAMITA

Department: HISTORY

Semester: EVEN SEMESTER

Month		Topics	Course	Paper Code/Name
April	**Theory:**	1.Delhi before 1857: Company Raj, Mughal Court and Literary Culture Online Classes	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
January		1. Transition from Feudalism to Capitalism 2. Crisis of the Tokugawa Bakuhan 3. The Meiji Restoration 4. Economic Change; Agrarian Settlement, Fiscal policies, Industrialization Online Classes	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Korea
	Practical:			
	Tutorials:	Question-Answer sessions	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		Question-Answer sessions	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
May	**Theory:**	2. 1857 in Delhi; Rebel Violence and British Re-conquest. 3)Making of New Delhi: Imperial Ideology and Urban Morphology 4) Delhi in 1947; Partition and its Aftermath Online Classes	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times

February		5. Popular Rights Movement 6. Meiji Constitution 7. Japanese Imperialism; Ideology, Expansion and Conflict online classes	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
	Practical:			
	Tutorials:	Question- Answer sessions. Remedial classes for Hindi medium students. quiz	B.A(Hons.) First year (2nd semester	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		Question- Answer sessions. Remedial classes for Hindi medium students. quiz	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
June March	**Theory:**	5) Making of Contemporary Delhi: Displacement and Resettlement Online Classes	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		8. Militarism 9. American Occupation of Japan Emergence of Modern Korea (a) The old order and Institutional Decay:Joseon Korea Online Classes	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Korea
	Practical:			
	Tutorials:	Question- Answer sessions	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		Question- Answer sessions	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
	Assignment	Assignment was given to students Q) Revolt of 1857 was an expression of anger by the soldiers and people of India against East India Company. Explain. What was the aftermath of British reconquest of Delhi in September 1857?	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times

		Assignment was given to students Q. What were the internal and external crises of the Tokugawa Shogunate which led to its decline?	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
July	**Theory**	Topic V1- Capital Culture; Public Spaces and Socialites Online Classes	B.A(Hons.) First year (2nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
April		Online Classes Korea's interactions with the western powers and Korea's unequal treaties with Japan (c) Attempts at social, political and economic reforms in Korea (d) Japan's colonization: March First Movement and the growth of Korean nationalism; in situational transformation 1910-1945 (Korean War	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
	Practical:			
	Tutorials:			
	Mid Term Test	NA	NA	
		NA	NA	
	Practical:			

	Tutorials:			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January - April, 2020

Name of the Faculty: NEERAJ SAHAY

Department: HISTORY

Semester: II

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	UNIT I 1. Introducing the early historical: Sources (600 BCE onwards) 2. Historiographical Trends: Early historic period with reference to state formation, literacy , forests UNIT VI 1. Creative and Scientific Literature	B.A. (Honours) I	Core Course III, Paper- History of India-II
		UNIT I 1. Survey of the sources UNIT II 1. Gupta and The Vakatakas: Administration, state, economy, society, religion and art	B.A. (Programme) I	Core Paper II, Paper- History of India c. 300-1200
	Practicals:	N/A		
	Tutorials:	Discussion on defining concepts of early historical, sources for Early India, References and question-answer sessions	B.A. (Honours) I	Core Course III, Paper- History of India-II
		Discussion of the sources, a background of Pre-Gupta situations and questions-answer sessions	B.A. (Programme) I	Core Paper II, Paper- History of India c. 300-1200

FEBRUARY	**Theory:**	UNIT II 1. Changing Political Formations (c. 600 BCE to c. 300CE): *Mahajanapadas*: Monarchies and *Gana/samghas* 2. The Mauryan Empire: Political Structure 3. Economy and Society (c.600 BCE to c. 300CE): Agrarian and Urban Economy with Reference to Indo-Roman Trade UNIT III 1. Changes in the Post-Gupta period and characterization of early medieval period UNIT IV 1. Vardhans, Pallavas and Chalukyas: Political and cultural developments	B.A. (Honours) I B.A. (Programme) I	Core Course III, Paper- History of India-II Core Paper II, Paper-History of India c. 300-1200
	Practicals:	N/A		
	Tutorials:	Discussions on early historical trajectories of political, economic and social developments. Questions-answer sessions Discussion of Post-Gupta Developments and the theoretical podels of Feudalism, Segmentary State and Integrative Polity. Questions-answer session	B.A. (Honours) I B.A. (Programme) I	Core Course III, Paper- History of India-II Core Paper II, Paper-History of India c. 300-1200
MARCH	**Theory:**	UNIT II *1.* Mauryan Polity: *Dhamma* *2.* Post Mauryan Polities: Kushanas and Satavahanas *3.* Tamilakam UNIT III and IV 1. Society(c.600 BCE-300CE) and Social Stratification 2. Gupta Polity UNIT V 1. Palas, Pratiharas and Rashtrakutas: Introduction; tripartite conflict	B.A. (Honours) I B.A. (Programme) I	Core Course III, Paper- History of India-II Core Paper II, Paper-History of India c. 300-1200
	Practicals:	N/A		

	Tutorials:	Questions-answer sessions Questions-answer sessions	B.A. (Honours) I B.A. (Programme) I	Core Course III, Paper- History of India-II Core Paper II, Paper- History of India c. 300-1200
	<u>Assignment</u>	1. Trace the social developments in Mauryan and Post Mauryan period <u>Any one of the following:</u> 1. Discuss the cultural developments during Gupta and Vakataka period. 2. Describe the ways in which Gupta period was a watershed between past and future polities. 3. Underlining the changes that occurred in early medieval centuries, critically discuss their characterization	B.A. (Honours) I B.A. (Programme) I	Core Course III, Paper- History of India-II Core Paper II, Paper- History of India c. 300-1200
	<u>Mid Term Test</u>			
APRIL	**Theory:**	UNIT IV 1. Defining Early Medieval 2. Post Gupta polities 3. Society and Economy UNIT V 1. Buddhism and Jainism 2. Consolidation of Brahmanical Tradition 3. Puranic Hinduism UNIT VI 1. Art and Architecture UNIT VI 1. Emergence of Rajput States in North India; foundations UNIT VII 1. Cholas State and administration, economy and culture UNIT VIII 1. Arabs, Ghazanavites, trans-regional exchnage	B.A. (Honours) I B.A. (Programme) I	Core Course III, Paper- History of India-II Core Paper II, Paper- History of India c. 300-1200

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
April - August, 2020
(Revised January-May Calendar)

Name of the Faculty: PREETI GULATI

Department: HISTORY

Semester: II

Month		Topics	Course	Paper Code/Name
APRIL	**Theory:**	UNIT I 1.Introducing the early historical: Sources (600 BCE onwards) UNIT II: 1.600 BCE: Beginnings of state society, different political formations, mahajanapadas, ganasanghas, UNIT V: 1. 600 BCE: Sramanic traditions: Doctrines of Buddhism and Jainism, inter-linkages and implications on polity, economy and society. 2. Consolidation of the Brahmanical Tradition: changes between the Early Vedic and Later Vedic literature and systems	B.A. (Honours) I	Core Course III, History of India-II
		UNIT I 1. Survey of the sources UNIT II 1. Guptas and Vakatakas: Administration, state, economy, society, religion and art	B.A. Programme I	Core Paper II: History of India c. 300-1200
	Practicals:	N/A		
	Tutorials:	Discussion on defining concepts of early historical, sources for Early India, References and question-answer sessions	B.A. (Honours) I	Core Course III, History of India-II
		Discussion of the sources, a background of Pre-Gupta situation and question-answer sessions	B.A. Programme I	Core Paper II: History of India c. 300-1200

MAY	**Theory:**	UNIT II 1.Mauryan Empire: understanding difference between kingdom and empire, political structure, nature of dhamma Megasthenes and Kautilya case studies 2.Kushanas and Satavahanas: extend and nature of rule 3.Tamilakam: Sangam literature, five *tinais*, landscape, polity and economy UNIT III: 1. Agrarian relations c. 600 BCE-300 CE. 2. Urban growth: comparative studies of patterns of urbanisation in north, central and southern India, external and internal trade interactions with special focus on Indo-Roman trade.	B.A. (Honours) I	Core Course III, History of India-II
		UNIT III 1.Changes in the Post-Gupta period and characterization of early medieval period; understanding land-grants, changing historiographical perspectives on feudalism vis-a-vis integrative framework UNIT IV 1. Vardhans, Pallavas and Chalukyas: Political and cultural developments	B.A. (Programme) I	Core Paper II: History of India c. 300-1200
	Practicals:	N/A		
	Tutorials:	Discussions based on extracts from Arthashastra and Megasthenes'Indica to understand variations in historical sources, discussions on historical methods. Question-answer sessions	B.A. (Honours) I	Core Course III, History of India-II
		Discussions on Post-Gupta Developments and the theoretical models of Feudalism, Segmentary State and Integrative Polity. Question-answer session	B.A. (Programme) I	Core Paper II: History of India c. 300-1200

	Project Presentations	On a topic of your choice, research and present a 10 minute presentation, based on original research and secondary readings.	BA Honours I	Core Course III, History of India-II
JUNE	**Theory:**	UNIT III 3.Patterns of social stratification: class, varna, jati, gender, marriage and property relations, untouchability UNIT IV 1.Towards early medieval India: Introducing changing historical perspectives 300-750 CE, role of land grants in agrarian expansion, graded land rights and peasantry 2.Guptas and Vakatakas: nature of polities, society, economy, classical age of literature and art. 3. Debate on urban decline: textual perspectives on urban culture 4.Varna, proliferation of jatis, changing ideas of marriage and inheritance UNIT V 1. Palas, Pratiharas and Rashtrakutas: Introduction; tripartite conflict over Kannauj UNIT VI: 1. Rajput States in north India: questions of origins, socio-economic foundations UNIT VII: 1. Cholas: State and administration, economy and culture	B.A. (Honours) I B.A. (Programme) I	Core Course III, History of India-II Core Paper II: History of India c. 300-1200
	Practicals:	N/A		
	Tutorials:	Discussions based on relevant extracts from Pali and Sanskrit texts to understand patterns of urban culture and evolving varna-jati system; question-answer session Discussions on nature of political formations at the macro-level in early medieval India, understanding similarities and differences in the post-Gupta polities.	B.A. (Honours) I B.A. (Programme) I	Core Course III, History of India-II Core Paper II: History of India c. 300-1200

	Assignment	Answer Any one of the following: Q1. According to Megasthenes, all land belonged to the king, Chandragupta Maurya, and he exercised direct control over his realm. How far do you think Megasthenes was correct in his observation ? Evaluate Megathenes' observation in light of other sources to discuss the nature of Mauryan control and administration. **OR** Q2. In RS Sharma's monumental work *'Urban Decay in India, c.300-1000 CE'*, (1987), he argued that in this period, cities that had been flourishing earlier, witnessed large-scale desertion and decline. Do you agree? Corroborate your answer with evidence and examples. **OR** Q3. Discuss the evolution of the varna-jati system from c.200 BCE to 750 CE, with special attention on gender relations, occupation and property inheritance rights. Discuss the cultural developments during Gupta and Vakataka period. Answer any one of the following 1. Examine the new trends which emerged in society and economy during the post-Gupta period **OR** 2. Write an essay on the main features of Chola administration, with special emphasis on the role played by local-level bodies.	B.A. (Honours) I B.A. (Programme) I	Core Course III, History of India-II Core Paper II: History of India c. 300-1200

JULY-AUGUST	**Theory:**	UNIT V 1. Puranic Hinduism: Beginnings and consolidation UNIT VI 1. Creative and Scientific literature: brief look at treatises 2. Art and Architecture: Mauryan Art, religious and political symbolism; beginnings of sculpture, Gandhara, Mathura and Amaravati styles; Rock-cut caves; Temple architecture and Puranic representations in sculpture, forms of patronage UNIT VIII 1. Arabs, Ghazanavids and Ghurids, trans-regional exchange, understanding military and political formations in Northwest Indian subcontinent. 2. Art and Architecture: Buddhist art, rock-cut caves, stone sculptures and temple architecture in 300-1200 CE	B.A. (Honours) I B.A. (Programme) I	Core Course III, History of India-II Core Paper II: History of India c. 300-1200
	End-Term Test	1. Outline in your own words, the differences in the campaigns of Mahmud Ghazni and Muhammad Ghuri, and analyse the reasons for their success in the northwest part of the subcontinent.	B.A. Programme I	Core Paper II: History of India c. 300-1200

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Rajni Chandiwal/IV/VI **Department: History**
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory-1.**	• 17th Century Crises-Economic, Social and Political Dimensions, • The English Revolution, Major Issues, Political and intellectual Currents.	Core Course	Rise of the Modern West-II/ VIII
	2.	• Caste Community and Nation: Regional, Religious and Linguistic Identities, Assertions of Caste Identity-Sanskritisation and anti-Brahamanical Trends – Regional Variations. • Economy and Social classes-Economic Critique of Colonial Rule, Rise of Modern Industry –Emergence of Capitalist and Working Class, Famines and Their Impacts.	Core Course-X	History of India VIII (1857-1950)
	Practicals	NA		
	Tutorials	• Discussion on the theme • Discussion on the theme and reading of fiction of the same.		

FEBRUARY	**Theory:** **1.** **2.**	• The Rise of Modern Science in Relation to the European Society from Renaissance to 17 Century., Mercantilism. • Early Nationalism: Emergence of Congress, Moderates and Extremists, Swadesi and Revolutionary Movements • Emergence and Social Base of Gandhian Nationalism – Intellectual Foundation of Gandhian Nationalism, Rowlett, Khilafat and Non Cooperation Movements		
	Practicals:	NA		
	Tutorials:	Discussion on theme Screening a movie of the National Movement		

	<u>Assignment:</u> 1 **2.**	• 17 century Crises/Causes/Historiography/Debate • Non Cooperation and Anti caste Movement		
MARCH	**Theory: 1** **2.**	• Enlightenment Ideas and its Impact • Mercantilism • Civil Disobedience Movements, Quit India Movements , Other Currents in Nationalism Ambedkar and Dalit Movement, • Singh Sabha and Akali Movement, Left Movements, Peasants and Workers, Tribal Movements, Communalism and Ideological Practices.		
	Practicals:	NA		
	Tutorials:	Discussions /Presentations		
	<u>Test</u>	On the themes taught till March		
APRIL	**Theory: 1** **2.**	• Origin of Industrial Revolution –Divergence Debate • Partition • Independence and the New State		

	Practicals:	NA		
	Tutorials:	Question Answer/Discussion		

MAY	**Theory: 1** **2.**	Revision Revision		
	Practicals:	NA		
	Tutorials:	Revision		

SEMESTER WISE
TEACHING PLAN

SRI VENKATESWARA
January - May, 2021

Name of the Faculty: Dr. Vandana Joshi

Department: History Semester: VI 2021

Month		Topics	Course	Paper Code/Name
January	**Theory:**	I. Varieties of Nationalisms and the remaking of states in the 19th and 20th centuries [a] Intellectual currents, popular movements and the formation of national identities in Germany, Italy and the Balkans. [b] Post-Unification: problems of state building in Germany and Italy II. Tsarist Russia and the coming of the Bolshevik revolution [a] Serfdom, Populism and Social Democracy [b] The Revolution of 1905; the revolutions of 1917: origins, visions, movements	**BA HON Core Course XIV**	**History of Modern Europe-II** I.
		I. The Scientific Revolution and the Enlightenment [a] A new view of the universe and matter [b] Reflections on the scientific method [c] Hobbes, Locke and the Philosophes [d] Despotism and the limits of Enlightenment	BA Programme DSE	Cultural transformation in Early Modern Europe
	Practicals:			
	Tutorials:	Presentations		
		Presentation		

February	**Theory:**	III. Imperialism, war and crisis, c. 1880-1939 [a] Theories and mechanisms of Imperialism [b] War of 1914-18: historiographical debates; developments leading to the War; power blocs and alliances	**BA HON Core Course XIV**	**History of Modern Europe-II** I.
		II. Literacy and artistic developments [a] Literacy trends from Dante to Shakespeare [b] Art from Baroque to Rococo and Neo Classicism [c] Novels as an art form	BA Programme DSE	Cultural transformation in Early Modern Europe
	Practicals: **Tutorials:**			
March	**Theory:**	[c] Fascism and Nazism: origins and forms; nature of the fascist state	**BA HON Core Course XIV**	**History of Modern Europe-II**
		[d] Women and the new Public Sphere III. Transitions in popular culture and mentalities c. 1550 – 1780 [a] Family and marriage patterns [b] The decline of magic,the rise of 'witch' trials	BA Programme DSE	Cultural transformation in Early Modern Europe
	Practicals:			

	Tutorials:	presentattions		
	Assignment			
April	**Theory**	IV. Cultural and intellectual developments since c.1850 [a] Creation of a new public sphere, print culture, mass education and the extension of literacy [b] Creation of new cultural forms: romanticism to abstract art [c] Institutionalization of disciplines: history, anthropology, psychology	**BA HON Core Course XIV**	**History of Modern Europe-II**
		[c]Changing mentalities and popular protests: Jacqueries, food riots and the crowd	BA Programme DSE	Cultural transformation in Early Modern Europe
	Practicals:			
	Tutorials:			
	Mid Term Test			

May	**Theory:**	[d] Culture and empire: race, gender and Imperialism; Orientalism	**BA HON Core Course XIV**	**History of Modern Europe-II**
		[d] Absolutism and the peasantry in Eastern Europe	BA Programme DSE	Cultural transformation in Early Modern Europe
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN
(2019-2020)
SRI VENKATESWARA COLLEGE

Name of the Faculty: **Dr. Haokam Vaiphei**
Department: **Political Science**
Even Semester: **II/IV/VI**

Name of the Paper: **Policy and Administration in India, IV SEM**

Month		Topic	Course	Paper Code/Name
January	**Theory**	Public Policy: 1. Definition, Characteristics and models 2. Public Policy Process in India	Honours Core Paper	**12321402_OC**
	Practicals			
	Tutorials	Public Policy		
February	**Theory**	Decentralization: 1. Meaning Significance and approaches and types 2. Local Self-government in India: Rural-Urban		
	Practicals			
	Tutorials	Decentralization		
	Assignment	Administration of various states and issues of Public Policy		
March	**Theory**	Budget: 1. Concept and Significance of Budget 2. Budget cycle in India 3. Various Approaches and Types of Budgeting		
	Practicals			
	Tutorials	Union Budget		
April	**Theory**	Citizen and Administration Interface 1. Public Service Delivery 2. Redressal of Public Grievances: RT1, Lokpal, Citizen's Charter and E-Governance 3. Social Welfare Administration: Concept and Approaches of Social Welfare & Social Welfare Policies		
	Practicals			
	Tutorials	E-Charter		
	Test	Presentations of Projects		
May	**Theory**	Social Welfare Policies Right to Education, s		
	Practicals			
	Tutorials	Various Schemes		

Name of the Paper: Politics of Globalisation GE-II

Month		Topic	Course	Paper Code/Name
January	**Theory**	***Concept of Globalization:*** Globalization debate; for and against. Approaches to understanding globalization: a. Liberal approach b. Radical approach	GE – II SEM	**Politics of Globalization**
	Practicals			
	Tutorials	Liberal & Radical Approaches		
February	**Theory**	***International Institutions/Regimes*** a. World Bank b. International Monetary Fund c. The World Trade Organization		
	Practicals			
	Tutorials			
	Assignment	Debates for & against Globalisation		
March	**Theory**	***Issues in Globalization:*** Alternative Perspectives on its nature and character, critical dimensions: economic, political and cultural Globalization and democracy: State, sovereignty and the civil society		
	Practicals			
	Tutorials	Other dimensions of Globalization		
April	**Theory**	Globalization and democracy: State, sovereignty and the civil society. Globalization and Politics in developing countries Globalization and social movements Globalization and the demise of Nation State		
	Practicals			
	Tutorials	Globalization & the State		
	Test	Unit I & II		
May	**Theory**	Globalization and human migration The inevitability of globalization: Domestic and Global responses		
	Practicals			
	Tutorials	Revision		

Name of the Paper: **Colonialism and Nationalism in India (DSE) VI SEM**

Month		Topic	Course	Paper Code/Name
January	**Theory**	**Colonialism & Nationalism:** a. Main perspectives on colonialism: Liberalism, Marxism, Postcolonialism	Honours DSE Paper	**12327905**

		b. Approaches to the study of nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern interpretations		
	Practicals			
	Tutorials	Subaltern Approach		
February	**Theory**	**Colonial Rule in India and its impact:** a. Constitutional developments and the colonial state b. **Colonial ideology of civilizing mission**: Utilitarians and Missionaries c. Impact on agriculture, land relations, industry and ecology		
	Practicals			
	Tutorials	Civilizing Mission		
	Assignment	Write an essay on your idea of India Minimum word limit: 1300		
March	**Theory**	**Reform and Resistance:** a. The 1857 rebellion b. Major social and religious movements c. Education and the rise of the new middle class		
	Practicals			
	Tutorials	Rise of Middle Class		
April	**Theory**	**Nationalist Politics and Expansion of its *Social Base*** a. Phases of the Nationalist Movement: Liberal constitutionalist, Swadeshi and the Radicals, Formation of the Muslim League b. Gandhi and mass mobilization: Non-cooperation, Civil Disobedience, and Quit India Movements c. Socialist alternatives: Congress socialists, Communists d. Communalism in Indian Politics e. The two-nation theory, negotiations over partition		
	Practicals			
	Tutorials			
	Test	Presentations of Assignments		
May	**Theory**	Social Movements a. The Women's Question: participation in the national movement and its impact b. The Caste Question: anti-Brahmanical Politics c. Peasant, Tribals, and Workers movements		
	Practicals			
	Tutorials	Women empowerment		

(Dr. Haokam Vaiphei)
Assistant Professor
Department of Political Science

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even Semester)

Name of the Faculty: Dr. S. Venkata Kumar

Department: Commerce

Semester: VI

Name of the course: B.Com (Hons.)

Subject: International Business

Paper code: DSE BCH – 6.4 (c)

Unique Paper Code: 22417604

Month	Type of Class	Topics	Course	Paper Code/Name
January 2021	**Theory**	1. An introduction to international business: Globalisation and its growing importance in world economy; Impact of globalization; international business contrasted with domestic business – complexities of international business; Modes of entry into international business; 2. International business environment: National and foreign environments and their components - economic, cultural, and political-legal environments; Global trading environment – recent trends in world trade in goods and services; trends in India's foreign trade (volume, composition and direction of trade from 2005 to 2016).	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
January 2021	**Tutorials**	Unit -1 (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February	**Theory**	1. International trade: Theories of international trade (mercantilist,	B.Com.	DSE BCH 6.4 (c):

2021		classical, factor proportion, Leontief paradox, Linder's income preference, PLC, National Competitive advantage theories); tariff and non-tariff measures (diagrammatic explanation); Balance of payment account (as per latest IMF standards) and its components (structure, components, equilibrium and disequilibrium). 2. International and economic organisations: WTO (also WTO and India), UNCTAD, World Bank and IMF (only short notes). 3. Exchange rate determination: factors affecting exchange rate – relative inflation rates, relative interest rates, relative income levels, government controls (only overview), expectations (only overview) etc. Government intervention and government influence on exchange rates (only fixed and floating exchange rates and convertibility). Theories of exchange rate – purchasing power parity, interest rate parity and Fisher's effect.	(Hons) - VI	International Business
February 2021	**Tutorials**	Unit –II (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March 2021	**Theory**	1. Regional economic integration: forms of regional integration; integration efforts among countries in Europe (EU), North America (NAFTA) and Asia (SAARC and ASEAN); cost and benefit of regional economic integration. 2. Special Economic Zones and 100% export-oriented units (EOUs)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
March 2021	**Tutorials**	Unit –III (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
	Assignment	Assignment will be issued to students.	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
	Test	Test would be conducted on the concerned subject after mid-semester	B.Com.	DSE BCH 6.4 (c):

		break.	(Hons) - VI	International Business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
April 2021	**Theory**	1. International Financial environment: International financial system and institutions; foreign investment in Indian perspective. 2. Measures for promoting foreign investments into and from India, Indian joint ventures and acquisitions abroad.	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business
April 2021	**Tutorials**	Unit –IV & V (Entire)	B.Com. (Hons) - VI	DSE BCH 6.4 (c): International Business

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Mamta Arora **Department: Commerce**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 1: Matrices & Determinants	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
FEBRUARY	**Theory**	Unit 2: Basic calculus – Application of differentiation Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Assignment	Unit 1 and 4	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
MARCH	**Theory**	Unit 3: Advance Calculus – Application of partial differentiation	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Test	Unit 1, 2 and 3 (application of partial differentiation)	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
APRIL	**Theory**	Unit 3: Advance Calculus – Application of integration Unit 5: LPP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shruti Mathur **Department: Commerce**

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 1: The Investment Environment** - The investment decision process, Types of Investments – Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, sources of financial information, Concept of return and risk, Impact of Taxes and Inflation on return	B.Com H Sem VI	DSE-Fundamentals of Investment
	Tutorials	1). Discussion on IPO/FPO, Book building. Understanding SENSEX, NIFTY. Practice numerical on calculation of risk and return	B.Com (H) Sem VI	DSE: Fundamentals of Investment
FEBRUARY	**Theory:**	**Unit 2: Fixed Income Securities** - Bond features, types of bonds, estimating bond yields, Bond Valuation, types of bond risks, default risk and credit rating. **Unit 3: Approaches to Equity Analysis:** Valuation of Equity Shares using various models. Introductions to Fundamental Analysis	BCom H Sem VI	DSE: Fundamentals of Investment

	Tutorials:	Numerical and Presentations: Calculating Bond Yields analyzing the company's performances using various ratios and historical records.	BCom H Sem VI	DSE: Fundamentals of Investment
	Assignment:	Assignment & presentation on any topic selected by the student from the syllabus	BCom H Sem VI	DSE: Fundamentals of Investment
MARCH	**Theory:**	**Unit 3: Approaches to Equity Analysis**: Technical Analysis and Efficient Market Hypothesis, **Unit 4: Portfolio Analysis and Financial Derivatives:** Portfolio and Diversification, Portfolio Risk and Return	BCom H Sem VI	DSE: Fundamentals of Investment
	Tutorials:	Presentations and Numericals on : Equity Valuation and Portfolio Risk and Return. Including Markowitz model, CAPM etc	BCom H Sem VI	DSE: Fundamentals of Investment
	Test	Fixed Income Securities ; Approaches to Equity Analysis; The Investment Environment	BCom H Sem VI	DSE: Fundamentals of Investment

APRIL	**Theory:**	**Unit 4: MF & Financial Derivatives:** Mutual funds. Introduction to Financial Derivatives- Forward, Futures & Options, Financial Derivatives Markets in India. **Unit 5: Investor Protection** – Role of SEBI & stock exchanges in investor protection, investor grievances and their redressal system, insider trading, investors' awareness and activism.	BCom H Sem VI	DSE: Fundamentals of Investment
	Tutorials:	1) Presentation, and Discussion on MFs, Derivatives and Investor Protection.	BCom H Sem VI	DSE: Fundamentals of Investment

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shruti Mathur **Department: Commerce**

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit 1: The Investment Environment** - The investment decision process, Types of Investments – Commodities, Real Estate and Financial Assets, the Indian securities market, the market participants and trading of securities, security market indices, Concept of return and risk	B.Com Sem VI	DSE-Fundamentals of Investment
	Tutorials	Discussion on IPO/FPO, Book building. Understanding SENSEX, NIFTY. Practice numerical on calculation of risk and return	B.Com Sem VI	DSE: Fundamentals of Investment
FEBRUARY	**Theory:**	**Unit 1** : Impact of Taxes and Inflation on return**,** speculation gambling and investment**,** sources of financial information, **Unit 2: Fixed Income Securities** - Bond features, types of bonds, estimating bond yields, Bond Valuation, types of bond risks, default risk and credit rating.	B.Com Sem VI	DSE: Fundamentals of Investment

	Tutorials:	Numerical and Presentations: Calculating Bond Yields analyzing the company's performances using various ratios and historical records.	B.Com Sem VI	DSE: Fundamentals of Investment
	Assignment:	Assignment & presentation on any topic selected by the student from the syllabus	B.Com Sem VI	DSE: Fundamentals of Investment
MARCH	**Theory:**	**Unit 4: Portfolio Analysis and Financial Derivatives:** Portfolio and Diversification, Portfolio Risk and Return Mutual funds. Types . Calculation of NAV, Return. Expenses	B.Com Sem VI	DSE: Fundamentals of Investment
	Tutorials:	Presentations and Numericals on : Portfolio Risk and Return. Including Markowitz model, CAPM etc Discussion on MFs	BCom Sem VI	DSE: Fundamentals of Investment
	Test	Fixed Income Securities ; Approaches to Equity Analysis; The Investment Environment	B.Com Sem VI	DSE: Fundamentals of Investment

APRIL	**Theory:**	**Unit 4: Financial Derivatives:** Introduction to Financial Derivatives- Forward, Futures & Options, Financial Derivatives Markets in India.	B.Com Sem VI	DSE: Fundamentals of Investment
	Tutorials:	1) Presentation, and discussion on Derivatives Revision of all concepts	BCom Sem VI	DSE: Fundamentals of Investment

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms Pooja Jain **Department: Commerce** **Semester: II/IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**1.Unit I**:Nature and Scope, Difference between cost accounting and management accounting, cost control, cost reduction, cost management, difference between cost control, cost reduction and cost management. **Unit IV:** a. Absorption versus variable costing: Distinctive features and income determination. b. Cost-Volume-Profit Analysis: Break-even analysis-algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence. Determination of cost indifference point. **Unit 1: Introduction** Meaning, scope, objectives and advantages of cost accounting; Difference between financial and cost accounting. Cost concepts and classifications, Overview of elements of cost and Cost sheet. Role of a cost accountant in an organisation. Introduction to Cost Accounting Standards & Cost Accounting Records and Audit Rules **Unit II: Elements of Cost: Material and Labour** *Materials*: Material/inventory control techniques. Accounting and control of purchases, storage and issue of materials. Inventory systems, Methods of pricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, Standard Cost.	**1. B.Com. VI** **2. B.Com. IV**	1. **BC 6.1 Management Accounting** 2. **BC 4.1 Cost Accounting**
	Practicals	Introduction to excel and Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	1. Basics and significance of Management Accounting	**1. B.Com. VI**	**1. BC 6.1**

		will be discussed. Practical problems will be discussed related to following topics: a. Absorption versus variable costing: Distinctive features and income determination. 2. Practical problems on Material Costing will be discussed	**2. B.Com. IV**	**Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	**1.Unit II**: Budgeting and budgetary control: Concept of budget and budgetary control, objectives, merits, and limitations, Budget administration, Functional budgets, Fixed and flexible budgets, Zero base budget, Programme and performance budgets. **Unit VI**: Responsibility Accounting: Concept, Significance, Different Responsibility Centers, Divisional Performance Measurement – Financial Measures. **Unit II: Elements of Cost: Material and Labour** ***(a)*** *Materials*:Physical Verification, Accounting treatment and control of losses— Wastage, scrap, spoilage and defectives ***(b)*** *Labour*: Accounting and Control of labour cost. Time-keeping and time-booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and Incentive schemes- Halsey, Rowan, Taylor's differential piece wage. **Unit III: Elements of Cost: Overheads** Classification, allocation, apportionment and absorption of overheads, Under- and over-absorption; Capacity Levels and Costs; Treatments of certain items in costing like interest on capital, packing expenses, bad debts, research and development expenses. Activity based costing.	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Practicals	Excel projects of Mathematics of finance-FV-annuity & Lump sum, PV-annuity & Lump sum	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**

		Excel project: Graphical solutions of LPP Problems on Mathematics of Finance		
	Tutorials	1.Practical problems will be discussed related to following topics: a. Cost-Volume-Profit Analysis: Break-even analysis-algebraic and graphic methods. Contribution / sales ratio, key factor. Margin of safety. Angle of incidence. Determination of cost indifference point. b. Budgeting and budgetary control: Budget administration, Functional budgets, Fixed and flexible budgets 2. Practical problems will be discussed related to Material and labour	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Assignment	1.Assignment will be given from the topic: Absorption and variable Costing and CVP analysis. 2. Assignment from Unit I and II	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**1.Unit V:** Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new markets, make or buy, product mix, operate or shut down, sell or process further **Unit IV: Methods of Costing** Unit costing, Job costing, Contract costing, Process costing (including process losses, valuation of work-in-progress)	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Practicals	Excel Projects :LLP graphical solution and simplex using 'solver-in' in excel Problems on Mathematics of Finance	**B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	Practical questions and Presentation will be taken from the following topics:	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management**

		1. Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new market 2. Practical problems will be taken from Overheads		**Accounting** **2. BC 4.1 Cost Accounting**
	Test	Class Test will be conducted in the middle of the month from these topics: 1.Nature and scope of management accounting Absorption and variable costing C-V-P Analysis Budgetary Control 2. Unit I and II **Practical exam in B.Mathematics**	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	**1.Unit III**: Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances, Disposition of variances, Control ratios. **2.Unit IV: Methods of Costing** Process Costing **(**joint and by-products). Service costing (only transport).	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**
	Practicals	Problems on Mathematics of Finance	**1. B.Com. (Hons) – IV**	**BCH 4.2 B.Mathematics**
	Tutorials	1.Practical questions and Presentation will be taken from the following topics: a. Decision making: make or buy, product mix, operate or shut down, sell or process further b Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances, Disposition of variances, Control ratios.	**1. B.Com. VI** **2. B.Com. IV**	**1. BC 6.1 Management Accounting** **2. BC 4.1 Cost Accounting**

		Miscellaneous questions will be discussed from examination point of view. 2. Practical problems will be taken Methods of costing.		

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sindhu Mani Bag **Department: Commerce** **Semester:II/IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
January 2021		1. Meaning, Scope, Objectives and advantages of cost accounting, difference between financial and cost accounting, cost concepts and classifications, overview of elements of cost and cost sheet. Role of cost accountant in an organizations. Introductions to cost accounting standard & cost accounting records and audit rules. Elements of cost: materials and Labours- (a) materials: materials/inventory control technique, accounting and control of purchases, storage and issue of materials, Inventory systems, methods of fpricing of materials issues- FIFO, LIFO, simple average, weighted average, Replacement, wastage scrape, spoilage and defectives.	B.Com(P)-IV	1. BC 4.3: Cost Accounting
		2. Auditing: principles and Tecjnique of auditing; classification of audit, audit planning, Internal control-internal check, internal audit; role of auditors in corporate governance, peer review and independent review of audit; public company accounting oversight board(PCAOB), National financial reporting authority (NFRA) Corporate Governance: Meaning, significance and Principles, management and corporate governance; theories and models of corporate governance.	2. B.Com (H)-Sem-VIA	2.BCH 6. 1: Auditing and corporate Governance.
		3. Business Ethics: Morality and ethics, Business values and ethics, Various approaches to business ethics.	3. B.Com (H)-Sem-VIB	3.BCH 6.1. Auditing & Corporate Governance.

	Tutorial	1. Discussed and sorted out practical problem of students 2. Discussed case study of corporate governance 3. Discussed case study of Corporate governance	1. B.Com(P)-IV 2. B.Com (H)-Sem-VIA 3. B.Com (H)-Sem-VIB	1**.BC 4.3: Cost Accounting** **2.BCH 6. 1: Auditing and corporate Governance.** **3.BCH 6.1. Auditing & Corporate Governance**
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February-2021	**Theory**	**1. (b) Labour:** Accounting and control of labour cost, Time keeping and time booking. Concept and treatment of idle time, overtime, labour turnover and fringe benefits. **Elemennts of cost: Overheads-** classification, allocation, apportionment and absorption of overheads, under and over absorption, capacity level and cost, treatment of certain items in costing like interest on capital, packing expenses, bad debts, research and development expenses, activity based costing. **2.** Board structure and independent directors, board committees and their functions; shareholder activism and proxy advisory firms, role of ratinng agencies, whistle blowing, class action. **Major Corporate Governance Failures:** BCCI (UK),Maxwell Communication (UK), Enron (USA), World.com (USA) Anderson Worldwide (USA), Vivendi (France), Harshad Mehta Scam, Satyam Computer Service Limited, Lehman Brothers, and Kingfisher Airlines,PNB Heist and IL &FS Group Crisis; common governance problems noticed in various corporate failures, Codes and standard on corporate governance, Sir Aadrian Cadbury Committee 1992 (UK), OECD principles of corporate governance and Sarbanes Oxley (SOX) Act, 2002 (USA) 3. Business Ethics: Ethical theories, Ethical governance, Corporate ethics	1. B.Com. (P) – IVB 2. B.Com (H)-VIA 3.B.Com (H)-VIB	1. BC 4.3: Cost Accounting 2. BC.6. 1: Auditing and corporate Governance. 3.BCH 6.1: Auditing & Corporate Governance.

	Tutorial	1. **1.** Discuss and sort out practical problem of students 2. Discuss case study of corporate governance 3 Discuss case study of Corporate governance	. 1.B.Com(p) -IVB 2. B.Com(H)-VIA. 3. B.Com (H)-VIB	1.BC 4.3: Cost Accounting. 2.BCH 6. 1: Auditing and corporate Governance. 3.BCH 6.1. Auditing & Corporate Governance.
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March-2021	**Theory**	**1. Method of costing:** Unit costing, job costing,contract costing, process costing (including process losses, valuation of work in progress but excluding joint products by products), service costing (only transport). **2. Corporate Governance Framework in India:** Initiatives and reforms-confederation of Indian Industry (CII)(1997), Kumaram Mangalam Birla (1999), N.R. Narayana Murthy (2005) and Uday Kotak Committee (2017),Regulatory framework:Relevent provisions of companies Act, 2013, SEBI: Listing Obligations and Disclosure requrements Regulations(LODR), 2015. Corporate governance failure in public sector, Banking, Non-banking financial institutions 3. **Csr- Extension of Business Ethics, Benefits of adopting Ethics in Business, Ethics Programmee**	1. B.Com. (P) – IVB 2. B.Com. (H) – VI 3. B.Com. (H) – VI	1.BC 4.3:Cost Accounting 2.BCH.6.1: Auditing and corporate Governance. 3.BCH 6.1: Auditing & corporate Governance
	Tutorial	1. **1.** Discuss and sort out practical problem of students 2. Discuss case study of corporate governance 3 Discuss case study of Corporate governance	1.B.Com(P)-IVB 2. B.Com (H)-Sem-VIA 3. B.Com (H)-Sem-VIB	1.BC 4.3: Cost Accounting 2.BCH 6. 1: Auditing and corporate Governance. 3.BCH 6.1.

				Auditing & Corporate Governance.
	Assignment	1 .Topic allotment for1st assignment & collect 2 Topic allotment for1st assignment & collect 3 4 Topic allotment for1st assignment & collect	1.B.Com. (P) – IVB 2.B.Com.(H)-VIA 3.Bcom(H)-VIB	1. BC 4.3.Cost Accounting 2. BCH.6. 1:Auditing and corporate Governance. 3. BCH 6.1: Auditing & Corporate Governance
	Internal Test	1. Notification of date schedule and conduct of the Internal Examination 2. Notification of date schedule and conduct of the Internal Examination	1. B.Com. (P) – IV 2.B.Com (H)VIA	1. BC 4.3.Cost Accounting 2. BCH.6. 1:Auditing and corporate Governance.
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
April-2021	**Theory**	1. **Cost accounting book keeping system:** A brief introduction to integral and non-integral system of book keeping; Reconciliation of cost and financial accounts profit. 2. **Business Ethics and CSR:** Business Ethics and values; importance of ethics, ethical theories, code of ethics and ethics committee. Concept of corporate social responsibility, CSR and	2. B.Com. (P) – IVB 3. B.Com (H) – VIA	1. BC 4.3. Cost Accounting 2.BCH.6.1: Auditing and corporate

		Corporate Sustainability, CSR and business Ethics, CSR and Corporate governance CSR and Corporate Philanthropy; Environmental Aspects of CSR, Models and benefits of CSR Drivers of CSR, CSR in India. 3. Code of Ethics, Ethics Committee.	3.B.Com (H)-VIB	Governance. 3.BCH 6.1:Auditing &Corporate Governance. .
		Finalization of Internal Assessment	1. B.Com (P)-IV 2.B.Com (H) – VIA 3. B.Com (H)-VIB	1.BC 4.3: Cost Accounting 2 .BCH.6. 1: Auditing and corporate Governance. 3. BCH 6.1 Auditing & Corporate Governance.

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even-Semester)

Name of the Faculty: Dr. Vinod Kumar
Department: Commerce
Courses: B.Com (H)/B.Com
Semester: IV/VI

Month	Type of Class	Topics	Course	Paper Code/Name
January 2021	**Theory**	1. Understanding financial statements: introduction, statement of financial position (Balance Sheet), Statement of Earnings (Income statement), and statement of cash flows, additional disclosure statements; need for additional statements, auditor's report, director's report, electronic dissemination and corporate governance. 2. Objectives of project planning: introduction, objectives and process of project planning, monitoring and control of investment projects, relevance of social cost benefit analysis, pre-feasibility studies (project life cycle). 3. Role of SEBI and stock exchanges in investor protection.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Tutorials	1. Objectives of project planning: introduction, objectives and process of project planning, monitoring and control of investment projects, relevance of social cost benefit analysis, pre-feasibility studies (project life cycle).	1. B.Com. - VI	1. GE BC 6.4(b): Project Management
	Practical	1. Spreadsheet and its business applications	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
February 2021	**Theory**	1. Elements of Financial Statements: Inventories, receivables, assets (fixed, tangible, intangible),	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH-6.4 (h): Financial Reporting and

		leases, revenue, income-tax, retained earnings. 2. Technical analysis, marketing feasibility, techniques of risk analysis, collaboration arrangement, loan syndication, tax consideration in project preparation and legal aspects. 3. Investor grievances and their redressal system and insider trading.	3. B. Com – VI	Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Practical	1. Spreadsheet and its business applications	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
	Tutorials	1. Technical, economic and financial analysis	1. B.Com. - VI	1. GE BC 6.4(b): Project Management
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
March 2021	**Theory**	1. Ratio analysis 2. Business criterion of growth, liquidity and profitability, social cost benefit analysis, UNIDO approach, L-M approach, Investment criterion and choice of techniques. 3. Fundamental analysis and technical analysis.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Practicals	1. Word application and PPT applications	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
	Tutorials	1. Social cost benefit analysis	1. B.Com. - VI	1. GE BC 6.4(b): Project Management
	Assignment/ workbook	1. Assignments will be issued for financial reporting and analysis 2. Assignments will be issued for project management. 3. Assignments will be issued for fundamentals of investment. 4. Workbook will be issued for computer applications in business.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI 4. B.Com (Hons) - IV	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment 4. BCH 4.3: Computer applications in business

Month	Type of Class	Topics	Course	Paper Code/Name
April 2021	**Theory**	1. Financial ratios used in annual reports, management use of financial analysis, graphing financial information. 2. Cost and time management issues in project planning and management (PERT and CPM). 3. Efficient market hypothesis and valuation of equity shares.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment
	Practicals	1. Database applications in business	1. B.Com. – (H) - IV	1. BCH 4.3: Computer applications in business
	Tutorials	1. PERT & CPM	1. B.Com. - VI	2. GE BC 6.4(b): Project Management
	Test	1. Test would be conducted on the concerned subject. 2. Test would be conducted on the concerned subject. 3. Test would be conducted on the concerned subject. 4. Test would be conducted on the concerned subject.	1. B.Com. (Hons) - VI 2. B.Com. - VI 3. B. Com – VI 4. B.Com (Hons)- IV	1. DSE BCH-6.4 (h): Financial Reporting and Analysis 2. GE BC 6.4(b): Project Management 3. BC 6.2 (C): Fundamentals of Investment 4. BCH 4.3: Computer applications in business

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Neha Singhal **Department: Commerce** **Semester : IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1. An Introduction to E-Commerce. 2. Planning Online Business. 3. Introduction, Types of Audit, Audit Planning and Documentation, Internal Control System, Evidence in Auditing, Vouching, Verification of Assets, Verification of Liabilities, Appointment and Removal of Auditor, Rights and Duties of a Company Auditor, Auditor's Report, Liabilities of Auditor. 4. Electronic Money Transfer	1) B.com -IV 2) B.Com (H)-VI 3) B.Com (H)-IV	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BCH 4.5(f): Cyber Crimes and Laws
	Practical	1. Mathematics of Finance	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics
FEBRUARY	**Theory:**	1. Technology for Online business. 2. Cost Audit, Tax Audit, management Audit and EDP Auditing. 3. Corporate Governance 4. Major Corporate Failures 5. Electronic Records	1) B.com -IV 2) B.Com (H)-VI 3) B.Com-II 4) B.Com (H)-IV	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BC-2.2-Business Laws 4. BCH 4.5(f): Cyber Crimes and Laws
	Practical:	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2- Business Mathematics
	Assignment	1. Assignment form Chapter – Planning Online Business and Technology for Online Business. 2. Assignment from Chapter- Electronic Money Transfer 3. Assignment from Chapter- Appointment and Removal of an Auditor, Rights and	1) B.Com-IV 2) B.Com (H)-VI 3) B.Com (H)-IV	1. BCH-4.5(a) Entrepreneurship 2. BCH 4.5(f): Cyber Crimes and Laws

MARCH	**Theory**	1. E-payment System 2. Business Ethics 3. Regulatory Framework	1) B.com (H)-IV 2) B.Com (H)-VI 3) B.Com (H)-IV	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BCH 4.5(f): Cyber Crimes and Laws
	Practical	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics
	Test	1. Test from Chapter- Introduction to E-commerce, Planning Online Business and Technology for Online Business 2. Test from Chapter- Appointment and Removal of an Auditor, Rights and Duties of Auditor, Liabilities of an Auditor, Theories and Models of CG, Insider Trading, Whistle blower policy and Credit Rating Agencies.	1. B.com (H)-IV 2. B.Com (H)-VI	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG
APRIL	**Theory**	1. Security and Legal Aspects of E-Commerce 2. Corporate Social Responsibility 3. Case Laws	1) B.com-IV 2) B.Com (H)-VI 3) B.Com (H)-IV	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BCH 4.5(f): Cyber Crimes and Laws
	Practical	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: SHILPA

Department: COMMERCE

Semester:IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction Unit -1	B.com(H) semester VI	BCH 6.4(a) Financial Reporting & Analysis
		Valuation of Goodwill and shares Unit -3	B.com semester IV	BC 4.2 Corporate Accounting
		Introduction-Unit -1	B.com semester VI	BC 6.2(e) Organization Behavior
	Practicals Basics BC-4.4(a) E-Commerce **Tutorial** Doubt Session BC 4.2 Corporate Accounting Doubt Session BCH 6.4(a) Financial Reporting & Analysis			
February	**Theory:**	Disclosures Unit-2	B.com(H) semester VI	BCH 6.4(a) Financial Reporting & Analysis
		Amalgamation of Companies Unit -4	B.com semester IV	BC 4.2 Corporate Accounting
		Individual behavior & group behavior and decision making Unit 2&3	B.com semester VI	BC 6.2(e) Organization Behavior

	Practicals: Forms & Tables BC-4.4(a) E-Commerce **Tutorial** Doubt Session BC 4.2 Corporate Accounting Doubt Session BCH 6.4(a) Financial Reporting & Analysis			
March	**Theory:**	Emerging trends in reporting- Unit-5	B.com(H) semester VI	BCH 6.4(a) Financial Reporting & Analysis
		Holding Companies Unit-5	B.com semester IV	BC 4.2 Corporate Accounting
		Motivation & Dynamics of Organizational Behavior Unit-4 & Unit-6	B.com semester VI	BC 6.2(e) Organization Behavior

	Practicals: Forms & Tables BC-4.4(a) E-Commerce **Tutorial** Doubt Session BC 4.2 Corporate Accounting Doubt Session BCH 6.4(a) Financial Reporting & Analysis			
	Assignment :	Unit -1&2	B.com(H) semester VI	BCH 6.4(a) Financial Reporting & Analysis
		Unit 1&2	B.com semester VI	BC 6.2(e) Organization Behavior
April	**Theory:**	Emerging trends in reporting- Unit-5	B.com(H) semester VI	BCH 6.4(a) Financial Reporting & Analysis
		Holding Companies Unit-5	B.com semester IV	BC 4.2 Corporate Accounting
		Leadership,Power and conflict Unit -5	B.com semester VI	BC 6.2(e) Organization Behavior
	Practicals: Frames BC-4.4(a) E-Commerce **Tutorial** Doubt Session BC 4.2 Corporate Accounting Doubt Session BCH 6.4(a) Financial Reporting & Analysis			

	Test	Unit-4&5 Unit 4&5	B.com semester IV B.com semester VI	BC 4.2 Corporate Accounting BC 6.2(e) Organization Behavior

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Arpita Kaul **Department: Commerce**

Semester : II, IV & VI

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	AMALGAMATION, INTERNAL RECONSTRUCTION	B.Com IV	BC4.2 CORPORATE ACCOUNTING
		Unit I: Leadership Styles and attributes of Leadership; Transactional and transformational leadershiphttps://courses.lumenlearning.com/wm-principlesofmanagement/chapter/transformational-and-transactional-theories-of-leadership/; Ethical leadership, culture and leadership (the emerging trends in leadership are to be discussed with case studies and projects).	B.COM H IV	BCH 4.5 (c) Leadership and Team Development
	Practicals	INTEREST, SIMPLE INTEREST, COMPUND INTEREST	B.Com H IV	BCH4.2 BUSINESS MATHEMATICS
	Tutorials	Taking doubts and practice questions on amalgamation and internal reconstruction	B.Com IV	BC4.2 CORPORATE ACCOUNTING
		Doubts session	B.Com H IV	BCH4.1COST ACCOUNTING

FEBRUARY	**Theory:**	HOLDING Unit II: Groups and Group Processes The nature and types of groups; Group dynamics- group cohesion, group roles and group norms, **https://www.youtube.com/watch?v=vsfkk3tQmtw** threat to group effectiveness; Managing group and inter-group dynamics; Managing culturally diverse groups.	B.Com IV B.Com H IV	BC4.2 CORPORATE ACCOUNTING BCH 4.5 (c) Leadership and Team Development
	Practicals:	PRESENT VALUE, FUTURE VALUE, EQUATION OF VALUE	B.Com H IV	BCH 4.2Business Mathematics
	Tutorials:	Taking doubts and practice questions on holding Doubt Session	B.Com IV B.Com H IV	BC4.2 CORPORATE ACCOUNTING BCH 4.1 COST ACCOUNTING

MARCH	**Theory**	CASH FLOW, REDEMPTION OF PREFERENCE SHARE Unit III: Leaders and Group Decisions Group decision making; Power and influence in teams; https://screencast-o-matic.com/content/videos?sortBy=most_recent&pageView=grid&page=1 Leadership and team empowerment; Challenges in team decision making.	B.Com IV B.Com H IV	BC4.2 CORPORATE ACCOUNTING BCH 4.5 (a) Leadership and Team Development
	Practicals	ANNUTIES , LPP Using solver	B.Com H IV	BCH 4.2 Business Mathematics
	Tutorial	Taking doubts and practice questions on cash flow, redemption of share Doubt Session	B.Com IV B.Com H IV	BC4..2 corporate accounting BCH 4.1 COST ACCOUNTING

	Assign ment	Question on holding Students will be given a project to work on in which they will try to write a case study on Leadership/ Team Development where they will identify 1 person or group and analyse it on the basis of various leadership theories or group theories. It should be a real life case study and should be presented in the form of Microsoft presentation in the class.	B.Com IV B.Com H IV	BC4.2 Corporate Accounting BCH 4.5 (c) Leadership and Team Development
APRIL	**Theory:**	FINAL ACCOUNT, REDEMPTION OF DEBENTURES Unit IV: Team Building and Team Effectiveness Group vs. team; Evolution of group into teams; Stages of team development (team development **https://www.youtube.com/watch?v=qtpY9zwuzFM** case studies); Emotionally intelligent teams; Characteristics of effective team; Collaborative communication in teams; https://hbr.org/2007/11/eight-ways-to-build-collaborative-teams Problem solving and conflict resolution in teams. https://hbr.org/1993/03/the-discipline-of-teams-2 Unit V: Emerging Trends in Leadership Women in leadership; Leadership skills- coaching and mentoring; leadership and social media.	B.Com IV B.Com H IV	BC4.2 CORPORATE ACCOUNTING BCH 4.5 (c) Leadership and Team Development
	Tutorials: **TEST**	Doubts and practice questions on final accounts and redemption of debentures Doubts session After mid term break, in the second week of March.	B.Com IV B.Com H IV	BC4.2 CORPORATE ACCOUNTING BCH 4.1 COST ACCOUNTING

MOVIE SCREENINGS FOR LEADERSHIP AND TEAM DEVELOPMENT

1. MISSION MANGAL
2. CHAK DE INDIA
3. ROCK ON
4. PARMANU
5. INVICTUS
6. 12 ANGRY MEN

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mr. Ajit Singh **Department: Commerce**

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY-2021	**Theory**	**1.Introduction;** Meaning, scope, objectives and advantages of cost accounting; Difference between financial and cost accounting. Cost concepts and classifications,	1. B.Com (P)-IV	**1. BCH 4.1: Cost Accounting**
		2. Introduction to computers.	2. B.Com(H)-IV	**2. BCH 4.3 Computer Application In Business.**
		3. Grievance Redressal Mechanism under the CPA, 1986 **Filing and handling of Complaints.**	3.B.Com (H)-VI	**3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
	Tutorials /Practical:	1.Introduction to Preparing Presentation	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**

FEBRUARY -2021	**Theory:**	1.Overview of elements of cost and Cost sheet. Role of a cost accountant in an organisation. Introduction to Cost Accounting Standards & Cost Accounting Records and Audit Rules	1. B.Com (P)-IV	**1. BCH 4.1: Cost Accounting**
		2. Computer Networks.	2. B.Com(H)-IV	**2. BCH 4.3 Computer Application In Business.**
		3. **Leading Cases decided under Consumer Protection law by Supreme Court/National Commission**	3.B.Com (H)-VI	**3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
	Tutorials/Practical:	1. Inserting tables, Images,Text,Symbols	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**
	<u>Assignment</u>	Assignment and Presentation Given to the students.	1. B.Com (P)-IV	**1. BCH 4.1: Cost Accounting**
			2. B.Com(H)-IV	**2. BCH 4.3 Computer Application In Business.**
			3.B.Com (H)-VI	**3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
MARCH-2021	**Theory:**	1.Unit costing, Job costing, Contract costing, Process costing (including process losses, valuation of work-in-progress but excluding Joint products By Products). Service costing (only transport).	1. B.Com (P)-IV	**1. BCH 4.1: Cost Accounting**
		2.Introduction to Operating Systems. Database System.	2. B.Com(H)-IV	**2. BCH 4.3 Computer Application In Business.**
		3.**Consumer Protection in India. Industry Regulators and Consumer Complaint Redressal Mechanism**	3.B.Com (H)-VI	**3. BCH 6.4 DSE3 Consumer Affairs & customer care.**

	Tutorials/Practical:	1.Media,Design,Transition,Animation, and Slideshow.	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**
	Test	Time schedule decided for conduct of Internal exam on 3rd week of March.	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	**1. BCH 4.1: Cost Accounting** **2. BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
APRIL-2021	**Theory:**	1.A brief introduction to integral and non-integral system of book-keeping; Reconciliation of cost and financial accounts profit. 2.CAATS & Revision. 3.**Competition Act, 2002**	1. B.Com (P)-IV 2. B.Com(H)-IV 3.B.Com (H)-VI	**1. BCH 4.1: Cost Accounting** **2. BCH 4.3 Computer Application In Business.** **3. BCH 6.4 DSE3 Consumer Affairs & customer care.**
	Tutorials/Practical:	1.Business Presentation Using All Tools.		**1. BCH 4.3 Computer Application In Business.**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms Priyanka **Department: Commerce**

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY-2021	**Theory**	**1.Introduction;** Meaning, scope, objectives and advantages of cost accounting; Difference between financial and cost accounting. Cost sheet, Cost concepts and classifications,Elements of cost Overhead **2. Introduction-** computer crime,cyber crime,Kinds of cyber crimes,Difference between cyber crime and conventional crime **3. Accounting** for share capital and debentures	1. B.Com (H)-IV 2. B.Com(H)-IV 3.B.Com IV	**1. BCH 4.1: Cost Accounting** **2. BCH 4.5(d) Cyber Crimes and Laws** **3. BC 4.2 Corporate accounting**
	Tutorials /Practical:	1.Loan lease statement	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**

FEBRUARY -2021	**Theory:**	1.Elements of Cost : Material and labour, Unit costing and job costing 2. Definition of Terminology-Concept of Internet,Internet Goverance,E-Contract,E-Forms, data security, 3. Cash Flow statement	1. B.Com (H)-IV 2. B.Com(H)-IV 3.B.Com -IV	**1. BCH 4.1: Cost Accounting** **2. BCH 4.5(d) Cyber Crimes and Laws** **3. BC 4.2 Corporate accounting**
	Tutorials/Practical:	1. Regression ,Frequency,Ratio analysis	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**

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	<u>Assignment</u>	Assignment and Presentation Given to the students.	1. B.Com (H)-IV 2.B.Com -IV	**1. BCH 4.1: Cost Accounting** **2. BC4.2 Corporate accounting**
MARCH-2021	**Theory:**	1.Contract costing, Process costing (including process losses, valuation of work-in-progress but excluding Joint products By Products). Service costing (only transport). 2.Terminilogy Continues Computer, Computer Resiurse, Cyber Appellate, Tribunal, Data 3.Final Accounts	1. B.Com (H)-IV 2. B.Com(H)-IV 3.B.Com -IV	**1. BCH 4.1: Cost Accounting** **2. BCH 4.5(d) Cyber Crimes and Laws** **3. BC 4.2 Corporate accounting**

	Tutorials/Practical:	1Payroll and Capital Budgeting	1. B.Com (H)-IV	**1. BCH 4.3 Computer Application In Business.**
	Test	Time schedule decided for conduct of Internal exam on 3rd week of March.	1. B.Com (H)-IV 2. B.Com(H)-IV	**1. BCH 4.1: Cost Accounting** **2. BC 4.5(d) Cyber Crimes and Laws**
APRIL-2021	**Theory:**	1.A brief introduction to integral and non-integral system of book-keeping; Reconciliation of cost and financial accounts profit. 2. Case laws 3.**Banking companies**	1. B.Com (H)-IV 2. B.Com(H)-IV 3.B.Com -IV	**1. BCH 4.1: Cost Accounting** **2. BC 4.5(d) Cyber Crimes and Laws** **3. BC4.2 Corporate Accounting**
	Tutorials/Practical:	1.Depreciation Practical		**1. BCH 4.3 Computer Application In Business.**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Simranjeet Kaur **Department: Commerce**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to indirect taxes, State Compensation mechanism, exempted supply.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Concept of risk, sources and measurement of risk, risk retention and transfer, disaster risk management	Commerce GE-4	BCH 4.4(a) Insurance & Risk Management
	Tutorials /Practical:	Discussion on conceptual problems and solving numerical questions.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Discussion on contemporary events in the area of Insurance	Commerce GE-4	BCH 4.4(a) Insurance & Risk Management
		Spreadsheet and it's business applications	B.Com (Hons.) IV	BCH 4.3 (Computer Applications in Business)
FEBRUARY	**Theory:**	Registration, Levy and collection of GST, supply of goods or services or both, place of supply.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Need of insurance, principals of utmost good faith, insurable interest, proximate cause, subrogation and contribution	Commerce GE-4	BCH 4.4(a) Insurance & Risk Management

	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on contemporary issues Creating business spreadsheet, pivot tables, word processing	B.Com (Hons.) VI Commerce GE-4 B.Com (Hons.) IV	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management BCH 4.3 (Computer Applications in Business)
	Assignment	Comparison of GST structure across various countries Research paper presentation on allocated topics	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management
MARCH	**Theory:**	Time and value of supply,, composition levy, input tax credit. Legal aspects of insurance contract,loss assessment, computation of insurance premium, exclusion of perils	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management
	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on contemporary issues Database management system	B.Com (Hons.) VI Commerce GE-4 B.Com (Hons.) IV	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management BCH 4.3 (Computer Applications in Business)

	Test	Case study, short answer type and numerical questions to asked.		
APRIL	**Theory:**	Payment of taxes, refund, Reverse charge mechanism, Job work. IRDA act, objectives, compositions, duties, powers and functions, powers to make regulations	B.Com (Hons.) VI Commerce GE-4	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management
	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on emerging issues in finance. Practice and revision	B.Com (Hons.) VI Commerce GE-4 B.Com (Hons.) IV	BCH 6.2 (Goods and Services Tax) BCH 4.4(a) Insurance & Risk Management BCH 4.3 (Computer Applications in Business)

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2020-21)
TEACHING PLAN

Name of the Faculty: Mr. Aashish Jain **Department: Commerce** **Semester: II/IV/VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Goods & Service Tax** **a)** Constitutional framework of Indirect Taxes before GST, Concept of VAT: Meaning, Variants of VAT and Methods of VAT; Major defects in the structure of Indirect Taxes prior to GST. **b)** Rationale of GST; Structure of GST (SGST, CGST, UTGST & IGST); GST Council; GST Network; State Compensation Management & Registration **Cost Accounting** **a)** Cost sheet, Overview of elements of cost & Cost Sheet **b)** Material Costing with various methods – FIFO, LIFO, Simple Average, & Weighted Average **Investing in Stock Market** **a)** Basics of investment, Risk & Return, Instruments of Investments – Equity & Preference shares **b)** Types of orders & Analyst recommendations	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax 2. BC – 4.3: Cost Accounting 3. BC – 4.4(b): Investing in Stock markets
	Practical	**E – Commerce (HTML)** **1.** Introduction to HTML **2.** Structure of HTML **3.** Document, Tags & Attributes	B.Com – II Semester – IV	BCH 4.4(a): E - Commerce
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBRUARY	**Theory**	**Goods & Service Tax** 1) Supply of GST (Taxable Event) 2) Place of GST (Within State & Inter – State) 3) Time of Supply (Forward Charge; Reverse Charge & Rate of Change in GST) 4) Exemptions of Supply – Goods & Services 5) Levy & Collection of GST	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax 2. BC – 4.3: Cost Accounting 3. BC – 4.4(b): Investing in Stock markets

		6) Reverse Charge Mechanism **Cost Accounting** **a)** Labour Costing **b)** Time keeping & Book Keeping concept **Investing in Stock Markets** **a)** Overview of Indian Securities market – Primary market, private placements, Future & Options **b)** Stock exchange in India – BSE, NSE, MSEI		
	Practical	**E – Commerce (HTML)** **1.** Understanding Text Formatting **2.** Fonts & Hyperlinks	B.Com – II Semester – IV	BCH 4.4(a): E - Commerce
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH	**Theory**	**Goods & Service Tax** a) Eligible & Ineligible Input Tax Credit b) Composition Scheme c) Composite & Mixed Supply d) Recovery of Tax Credit e) Availability of Tax Credit f) Transfer of Input Tax Credit g) Job Work **Cost Accounting Accounting** **a)** Overhead Costing **b)** Classification, allocation & apportionment of overhead costing **Investing in Stock Markets** **a)** Analysis of Domestic & International scenario **b)** Industry Analysis, Cash flow statement Analysis	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	**1.** BCH 6.2: Goods & Service Tax **2.** BC – 4.3: Cost Accounting **3.** BC – 4.4(b): Investing in Stock markets
	Practical	**E – Commerce (HTML)** **1.** Insert Graphics, Copyrights, Trademarks Symbols in a Webpage	B.Com – II Semester – IV	BCH 4.4(a): E – Commerce
	Assignment	1. Topics allotment for making the assignments from Introduction and Levy & Collection and ITC	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax

	Test	1. Test conducted on the concerned subject after mid-semester break.	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester – IV	1. BCH 6.2: Goods & Service Tax
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL	**Theory**	**GST & Custom Laws** **a)** Tax Invoice, Credit & Debit Notes, Audit in GST, Self Assessment Tax, E – Way Bills, Offences & Penalties & Appeals **b)** Basic Concept of Custom Laws, Types of Custom Duties, Baggage Rules & Exemptions **Cost Accounting** **a)** Book keeping System **b)** Reconciliation Statement **Investing in Stock Markets** **a)** Trading Rules, confidence index, and charting (use of historic price) **b)** Do's & Don'ts of investment in markets **c)** Investment in Mutual Funds (Types of mutual funds) **d)** Factors affecting choice of mutual funds	1. B.Com – (H) III Semester-VI 2. B.Com – II Semester - IV	1. BCH 6.2: Goods & Service Tax 2. BC 4.3: Cost Accounting 3. BC 4.4(b): Investing in stock markets
	Practical	**E – Commerce (HTML)** **1.** Create list, forms, frames, tables **2.** Cascading Style Sheet	B.Com – II Semester – IV	BCH 4.4(a): E – Commerce

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mohini Yadav **Department: Commerce**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 2: Financial Markets and Capital markets	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 1: Data processing, networking and recent trends in computing	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
		Unit 5: Cost Accounting Book-Keeping Systems	B.COM (H) – Sem IV	**Cost Accounting BCH 4.1**
	Tutorials /Practical	Unit 5: Solver in LLP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
FEBRUARY	**Theory**	Unit 3: Financial Institutions I	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 2 & 3: Word processing and preparing presentations	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
		Unit 5: Cost Accounting Book-Keeping Systems	B.COM (H) – Sem IV	**Cost Accounting BCH 4.1**
	Tutorials /Practical	Unit 5: Solver in LLP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Assignment	Unit 2: Financial Markets and Capital markets	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 1: Data processing, networking and recent trends in computing	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**

MARCH	**Theory**	Unit 4: Financial Institutions II	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 4: Spreadsheet and its business applications	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
		Unit 5: Cost Accounting Book-Keeping Systems	B.COM (H) – Sem IV	**Cost Accounting BCH 4.1**
	Tutorials /Practical	Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Test	Unit 2 & 3: Financial Institutions I and II	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 1 to 4	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
APRIL	**Theory**	Unit 5: Financial Service Industry	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 5: Database Management System	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
		Unit 5: Cost Accounting Book-Keeping Systems	B.COM (H) – Sem IV	**Cost Accounting BCH 4.1**
	Tutorials /Practical	Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even Semester)

Name of the Faculty: Ms. Sunita Chhabra **Department: Commerce** **Semester: VI**

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY 2021	**Theory**	1. Conceptual framework: Concept of consumers, Nature of markets, concept of price in retail and wholesale, MRP and local taxes, fair price, misleading advertisements and deceptive packaging. Experiencing dissatisfaction, form of complaint to a business, making a complaint heard by the business, corporate redress system, conciliation and intermediation for out of court redressal. National standards, BIS Act, 1986, ISO 10000. 2. Nature and importance of personal selling, difference between personal selling, salesmanship and sales management, myths of selling, relationship marketing and role of personal selling, features of a good salesman, types of selling situations, types of salespersons, career opportunities in selling, measures for making selling an attractive career.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
FEBURARY 2021	**Theory**	1. The Consumer Protection Act, 1986: objectives and basic concepts, consumer rights, adjudicatory bodies, role of Supreme Court under the CPA. 2. Theories of selling: traditional and modern, AIDAS Model of selling, problem solving approach, right set of circumstances theory and modern sales approaches.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
MARCH 2021	**Theory**	1. Grievance redress mechanism under the CPA 1986 and leading cases decided under the CPA related to medical negligence, banking and financial service,	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care

		housing and real estate, electricity, water and telecom service, education, defective product and unfair trade practice. 2. Buying motives, concept of motivation, Maslow need theory, dynamic nature of motivation, buying motives and their uses in personal selling; selling process- prospecting and qualifying; pre-approach, presentation and demonstration; handling of objections and complaints, closing the sale, follow up and dealing customer concerns and complaints.		2. BC 6.3(A) SEC: Personal Selling and Salesmanship
	Assignment	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
	Test	1. Test would be conducted on the concerned subject after mid-semester break. 2. Test would be conducted on the concerned subject after mid-semester break.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
APRIL 2021	**Theory**	1. Consumer protection in India and industry regulators and consumer complaint redressal mechanism. Competition Law 2002: objective, purpose and salient features, concept of agreements having adverse impact on competition, abuse of dominant position, regulation of combination, criteria for determining appreciable adverse effect on competition and dominant position, relevant geographic market forces and complaints and procedures. 2. Sales reports and documents, sales manual, order book, cash memo, tour diary, daily and periodical reports and ethical aspects of selling.	1. B.Com (H)- VI 2. B.Com (P)- VI	1. BCH 6.4 DSE-3: Consumer Affairs and Customer Care 2. BC 6.3(A) SEC: Personal Selling and Salesmanship

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mohini Yadav **Department: Commerce**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Unit 5: LPP (Formulation and Graphical Solution)	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
		Unit 2: Financial Markets and Capital markets	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 1: Data processing, networking and recent trends in computing	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
	Tutorials /Practical:	Unit 5: Solver in LLP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
FEBRUARY	**Theory**	Unit 5: LPP (Formulation and Solution) – Simplex Problems	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
		Unit 3: Financial Institutions I	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 2 & 3: Word processing and preparing presentations	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
	Tutorials /Practical:	Unit 5: Solver in LLP	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**

	Assignment	Unit 5: LPP (Formulation and Solution) – Graphical and Simplex Unit 2: Financial Markets and Capital markets Unit 1: Data processing, networking and recent trends in computing	B.COM (H) – Sem IV B.COM P – Sem VI B.COM (H) – Sem IV	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3**
MARCH	**Theory**	Unit 5: LPP (Formulation and Solution) – Simplex Problems Unit 4: Financial Institutions II Unit 4: Spreadsheet and its business applications	B.COM (H) – Sem IV B.COM P – Sem VI B.COM (H) – Sem IV	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3**
	Tutorials /Practical:	Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
	Test	Unit 5: LPP Unit 2 & 3: Financial Institutions I and II Unit 1 to 4	B.COM (H) – Sem IV B.COM P – Sem VI B.COM (H) – Sem IV	**Business Mathematics BCH 4.2** **Financial Markets, Institutions and Services BC 6.1(e)** **Computer Applications in Business BCH 4.3**

APRIL	**Theory**	Unit 5: LPP (Formulation and Solution) – Dual Problems	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**
		Unit 5: Financial Service Industry	B.COM P – Sem VI	**Financial Markets, Institutions and Services BC 6.1(e)**
		Unit 5: Database Management System	B.COM (H) – Sem IV	**Computer Applications in Business BCH 4.3**
	Tutorials /Practical:	Unit 4: Mathematics of Finance	B.COM (H) – Sem IV	**Business Mathematics BCH 4.2**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even Semester)

Name of the Faculty: Ms Devki **Department: Commerce**

Month	Type of Class	Topics	Course	Paper Code/Name
March	Theory	**Unit I: The Indian Contract Act, 1872** Contract -meaning, characteristics and kinds.	B.com(P) Sem II	BC 2.2 Business law
April	Theory	**Unit I: The Indian Contract Act, 1872** Essentials of valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects. Void agreements. Discharge of contract – modes of discharge including breach and its remedies. Quasi – contracts.	B.com(P) Sem II	BC 2.2 Business law
May	Theory	**Unit II: Special Contracts** Contract of Indemnity and Guarantee, Contract of Bailment and Pledge Contract of Agency.	B.com(P) Sem II	BC 2.2 Business law
	Tutorials	**Presentation Assignment**		
June	Theory	**Unit III: The Sale of Goods Act, 1930** Contract of sale,meaning and difference between sale and agreement to sell. Conditions and warranties. Transfer of ownership in goods including sale by	B.com (P) Sem II	BC 2.2 Business law

		non-owners. Performance of contract of sale. Unpaid seller – meaning and rights of an unpaid seller against the goods.		
	Tutorial	**Presentation** **Assignment** **Case law Presentation**		
July	Theory	**Unit IV: The Limited Liability Partnership Act, 2008** Salient Features of LLP,Difference between LLP and Partnership, LLP and Company LLP Agreement. Nature of LLP. Partners and Designated Partners. Incorporation Document Incorporation by Registration, Registered office of LLP and change therein. Change of name. Partners and their Relations. Extent and limitation of liability of LLP and partners. Whistle blowing. Taxation of LLP. Conversion of LLP. **Unit V: The Information Technology Act 2000** Definitions under the Act. Digital signature. Electronic governance. Attribution, acknowledgement and dispatch of electronic records. Regulation of certifying authorities Digital signatures certificates. Duties of subscribers. Penalties and adjudication. Offences.	B.com (P) Sem II	BC 2.2 Business Law
	Tutorials	**Previous year Question Discussion** **Doubt Session**		BC 2.2 Business Law

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even Semester)

Name of the Faculty: Ms Devki **Department: Commerce**

Month	Type of class	Topic	Course	Paper code /Name
March	Theory	**Unit IV: Dividends, Audit and Winding Up** Introduction	B.com(H)	BCH 2.3 Corporate Law
April	Theory	**Unit IV: Dividends, Audit and Winding Up** Provisions relating to payment of dividend; Company Audit; Provisions relating to audit, Auditors' qualification, appointment, rotation of auditors, auditors' report	B.com(H)	BCH 2.3 Corporate Law
	Tutorial	**Doubt Session** **Discussion on Recent Amendments**		
May		**Unit IV: Dividends, Audit and Winding Up** Winding Up :Concept and modes of winding up; Liquidator; National company Law Tribunal (NCLT); Appellate Tribunal (NCLAT), Special Courts; Relevant provisions of Insolvency and Bankruptcy Code 2016.	B.com(H)	BCH 2.3 Corporate Law
	Tutorial	**Doubt Session** **Discussion on IBBI**		
June -July	Theory	**Unit V: The Depositories Act 1996** Definitions, Depositories System, Rights and Obligations of Despositories, Participants issuers and beneficial owners , Inquiry and Inspections , Penalty	B.com (H)	BCH 2.3 Corporate Law
	Tutorial	**Discussion on Depositories Act**		

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2020-21) (Even Semester)

Name of the Faculty: Ms Devki **Department: Commerce**

Month	Type	Topic	Course	Paper code /name
March	Theory	**Introduction**	B.com (H)	BCH 2.2 Corporate accounting
April	Theory	**Unit I: Accounting for Share Capital and Debentures** Introduction to issue of shares and debentures. Issue of rights and Bonus shares, ESOPs and buyback of shares, book building. Redemption of Preference shares, Redemption of debentures: sinking/debenture Redemption fund, open market purchase and conversion of debentures. *Relevant AS and IND-AS as applicable.*	B.com (H)	BCH 2.2 Corporate accounting
May	Theory	**Unit IV: Amalgamation, Reconstruction and Liquidation of Companies** Concept of Purchase Consideration. Accounting for Amalgamation of Companies (excluding inter-company transactions and holdings) and external reconstruction Accounting for Internal Reconstruction (excluding preparation of scheme for internal reconstruction). *Relevant AS and IND-AS as applicable.*	B.com (H)	BCH 2.2 Corporate accounting
	Tutorial	**Assignment** **Doubt session**		
June	Theory	**Unit III: Cash Flow Statements**	B.com (H)	BCH 2.2 Corporate accounting

		Meaning, Usefulness, Preparation of a cash flow statement in accordance with Accounting Standard 3(Revised) issued by the Institute of Chartered Accountants of India. (Only indirect method), Limitations of cash flow statement. *Relevant AS and INDAS as applicable*		
July	Theory	**Unit V: Accounts of Holding Companies/ Parent Companies** Preparation of consolidated balance sheet with one subsidiary company. *Relevant AS and IND-AS as applicable.* **Unit II: Financial Statements of a Company** Preparation of financial Statement of Joint Stock companies as per schedule III Part I & II (Division I in detail and Division II only on overview) *Relevant AS and IND-AS as applicable.*	B.com (H)	BCH 2.2 Corporate accounting
August	Theory	**Doubt Session** **Previous year question**	B.com (H)	BCH 2.2 Corporate accounting

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2020-21)
TEACHING PLAN

Name of the Faculty: Mr. Manish Kr. Dubey **Department: Commerce** **Semester: II**

Month	Type of Class	Topics	Course	Paper Code/Name
April	**Theory**	**Corporate Accounting (BCH)** • Introduction to issue of shares and debentures, • issue of rights and bonus shares, • underwriting of shares and debenture, • Redemption of preference shares **Corporate Laws (BCH)** • Introduction to companies act, features of companies, lifting of corporate veil **Business Math. & Stats. (BCP)** • Matrices: Introduction, types, matrix multiplication, crammers' rule, • Application of matrices • Mathematics of Finance	1. B.Com – (H) I Semester-II 2. B.Com- (H) - I Semester-II 3. B.Com – I Semester-II	1. BCH 2.2: Corporate Accounting 2. BCH 2.3: Corporate Laws 3. BC 2.3: Business Math. & Stats.
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
May	**Theory**	**Corporate Accounting (BCH)** • Redemption of debenture • Preparation of Financial Statements of company **Corporate Laws (BCH)** • Formation of company: Registration & Incorporation of a company, • Provisional and Pre-incorporation contract • Online registration of company **Business Math. & Stats. (BCP)** • Differentiation; Rules of differentiation • Application of differentiation • Central Tendency	1. B.Com–(H) I Semester-II 2. B.Com - (H) – I Semester-II 3. B.Com – I Semester-II	1. BCH 2.2 Corporate Accounting 2. BCH 2.3: Corporate Laws 3. BC 2.3: Business Math. & Stats.

Month	Type of Class	Topics	Course	Paper Code/Name
June	**Theory**	**Corporate Accounting (BCH)** • Redemption of debenture • Preparation of Financial Statements of company • Preparation of Cash Flow statement • Amalgamation **Corporate Laws (BCH)** • Director and Key Managerial Personnel: Meaning, Types, Duties and Liabilities of Directors • Key managerial personnel **Business Math. & Stats. (BCP)** • Measures of Dispersion • Correlation Analysis • Regression Analysis	1. B.Com – (H) I Semester-II 2. B.Com - (H) – I Semester-II 3. B.Com – I Semester-II	1. BCH2.2 Corporate Accounting 2. BCH 2.3: Corporate Laws 3. BC 2.3: Business Math. & Stats.
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
July	**Theory**	**Corporate Accounting (BCH)** • Internal reconstruction • Liquidation of companies • Accounts of holding and parent company **Corporate Laws (BCH)** • Meetings: Provisions related to meeting, Types of meeting, Quorum of meeting **Business Math. & Stats. (BCP)** • Index Numbers • Time Series **One Assignment and one Test for each paper.**	1. B.Com – (H) I Semester-II 2. B.Com - (H) – I Semester-II 3. B.Com – I Semester-II	1. BCH 2.2 Corporate Accounting 2. BCH 2.3: Corporate Laws 3. BC 2.3: Business Math. & Stats.

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2020-21)
TEACHING PLAN

Name of the Faculty: MUKESH KUMAR MEENA **Department: Commerce** **Semester: II**

Month	Type of Class	Topics	Course	Paper Code/Name
April-May	**Theory**	**BUSINESS LAWS** The Indian Contract Act, 1872 Contract – meaning, characteristics and kinds, Essentials of valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects. Void agreements. Discharge of contract – modes of discharge including breach and its remedies. **Corporate laws** Unit I: Introduction Meaning and characteristics of a company; Lifting of corporate veil; Administration of Company Law [including National Company Law Tribunal (NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Types of companies including private and public company, government company, foreign company, one person company, small company, associate company, dormant company and producer company; Association not for profit; Illegal association; Formation of company, promoters, their legal position and pre incorporation contracts; Online registration of a company. Unit II: Documents and shares Memorandum of Association and its alteration, Articles of Association and its alteration, doctrine of constructive notice, doctrine of ultra vires and indoor management; Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; book building; Allotment and Forfeiture of share, Sweat Equity, ESOPs, Bonus issue, and Further issue of shares, buyback and provisions regarding buyback; Membership of company. **business mathematics and statistics** Basic Mathematics of Finance: Simple and Compound interest (including continuous compounding); Rates of	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	1. Paper BC 2.2: BUSINESS LAWS 2. Paper BCH 2.3: Corporate laws 3. Paper BC 2.3 business mathematics and statistics

		interest- nominal and effective and their interrelationships; Compounding and discounting of a sum using different types of rates.		
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
June-july	**Theory**	**Business Laws** Special Contracts Quasi – contracts, Contract of Indemnity and Guarantee, Contract of Bailment and Pledge Contract of Agency The Sale of Goods Act, 1930 Contract of sale, meaning and difference between sale and agreement to sell. Conditions and warranties. Transfer of ownership in goods including sale by non-owners. Performance of contract of sale. Unpaid seller – meaning and rights of an unpaid seller against the goods. **Corporate laws** Unit III: Management and Meetings B.Com.(Hons) CBCS Department of Commerce, University of Delhi 21 Classification of directors-Additional, Alternate and Casual directors, Women directors, Independent director, Small shareholder's director; Director Identity Number (DIN); Appointment, Disqualifications, Removal of directors; Legal positions, Powers and Duties; Key managerial personnel, Managing director, Manager and Whole Time Director; Board Meetings: meeting through video conferencing; Shareholder meetings: AGM and EGM. Convening and Conduct of meetings: Requisites of a valid meeting; Resolutions; Postal ballot; e-voting. Unit IV: Dividends, Audit and Winding up Provisions relating to payment of Dividend, Company Audit-auditor's qualification and disqualifications, Auditor's appointment, Rotation of auditors, Auditor's removal, Auditors' report and Auditor's powers. Winding Up: Concept and Modes of Winding Up; Provisions of winding up under Insolvency and Bankruptcy Code	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1.** Paper BC 2.2: BUSINESS LAWS **2.** Paper BCH 2.3: Corporate laws **3.** Paper BC 2.3 business mathematics and statistics

		2016. Unit V: The Depositories Act **business mathematics and statistics** Differential Calculus: Mathematical functions and their types – linear, quadratic, polynomial; Concepts of limits and continuity of a function; Concept and rules of differentiation; applications of differentiation - elasticity of demand and supply, Maxima and Minima of functions relating to cost, revenue and profit.		
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
August	**Theory**	**Business Laws** The Limited Liability Partnership Act, 2008 Salient Features of LLP, Difference between LLP and Partnership, LLP and Company LLP Agreement. Nature of LLP, Partners and Designated Partners, Incorporation Document Incorporation by Registration, Registered office of LLP and change therein. Change of name, Partners and their Relations. Extent and limitation of liability of LLP and partners. Whistle blowing. Taxation of LLP. Conversion into LLP. Winding up and dissolution of LLP. The Information Technology Act 2000 Definitions under the Act. Digital signature. Electronic governance. Attribution, acknowledgement and dispatch of electronic records. Regulation of certifying authorities. Digital signatures certificates. Duties of subscribers under the Act. Penalties and adjudication. Offences as per the Act. **Corporate laws** Definitions; Depositories system; Rights and obligations of depositories; Participants issuers and beneficial owners; Inquiry and inspections; Penalty. **business mathematics and statistics** (a) Matrices: Definition and types; Algebra of matrices; Applications of matrix operations to simple business and economic problems; Calculation of values of determinants up to third order; Finding inverse of a	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1.** Paper BC 2.2: BUSINESS LAWS **2.** Paper BCH 2.3: Corporate laws **3.** Paper BC 2.3 business mathematicsand statistics

		matrix through determinant method; Solution of system of linear equations up to three variables.		
	Assignment	Topics allotment for making the assignments	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1)** Paper BC 2.2: BUSINESS LAWS **2)** Paper BCH 2.3: Corporate laws **3)** Paper BC 2.3 business mathematics and statistics
	Test	Test conducted on the concerned subject	1. B.Com: Semester-II 2. B.Com(H):Semester II 3. B.COM:semester II	**1)** Paper BC 2.2: BUSINESS LAWS **2)** Paper BCH 2.3: Corporate laws **3)** Paper BC 2.3 business mathematics and statistics

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2020-21)
TEACHING PLAN

Name of the Faculty: Mr. Yogesh Department: Commerce Semester: II

Month	Type of Class	Topics	Course	Paper Code/Name
April	**Theory**	**1. CORPORATE LAWS** **Unit-I: Introduction** Administration of Company Law [including National Company Law Tribunal (NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Types of companies including private and public Company, government company, foreign company, one person company, small company, associate Company, dormant company and producer company; Association not for profit; Illegal association **2. FINANCE FOR NON-FINANCE EXECUTIVES** **Unit: I Introduction** Meaning and importance of Finance. Time Value of money (Compounding & Discounting), Risk & Return. Alternative investment options, Sources of Long term financing and short term Financing. **Unit: II Financial Analysis & Capital Budgeting** Types of Financial Statements- Income Statement, Balance Sheet, Ratio Analysis: Meaning, Significance and Limitations. Current Ratio, Quick Ratio, Absolute Liquidity Ratio, Debt-Equity Ratio, Interest Coverage Ratio, Inventory Turnover Ratio, Debtors Turnover Ratio, Average Collection Period, Creditors Turnover Ratio, Average Payment Period, Return on Capital Employed, Earning Per Share, Dividend Per Share. **3. BUSINESS MATHEMATICS AND STATISTICS** **Unit II: Uni-variate Analysis** (a) Measures of Central Tendency: Arithmetic	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	1. BCH 2.3: CORPORATE LAWS 2. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 3. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS

		mean, Geometric mean, Harmonic Mean- Properties and applications. Median and other Partition values (quartiles, deciles, Percentiles), Mode. **(b) Measures of Dispersion:** absolute and relative- Range, Quartile deviation, Mean deviation, Standard deviation and their coefficients; Properties of Standard Deviation/Variance.		
	Practical			
Month	**Type of Class**	**Topics**	**Course**	**Paper Code/Name**
May	**Theory**	**1. CORPORATE LAWS** **Unit II: Documents and shares** Memorandum of Association and its alteration, Articles of Association and its alteration, doctrine of constructive notice, doctrine of ultra vires and indoor management; **2. FINANCE FOR NON-FINANCE EXECUTIVES** **Unit: II Financial Analysis & Capital Budgeting** Capital Budgeting Process, Capital Budgeting Techniques (Pay Back Period, Discounted Payback period, NPV, IRR). **3.BUSINESS MATHEMATICS AND STATISTICS** **Unit III: Bi-variate Analysis** (a) Simple and Linear Correlation analysis: Meaning, Measurement (Karl Pearson's Co-efficient and Spearman's Rank correlation) and Properties.	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	4. BCH 2.3: CORPORATE LAWS 5. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 6. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS
	Practical			

Month	Type of Class	Topics	Course	Paper Code/Name
June	**Theory**	**1. CORPORATE LAWS** **Unit II : Documents and shares/** Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; book building; Allotment and Forfeiture of share, Sweat Equity, ESOPs, Bonus issue, and Further issue of shares, buyback and provisions regarding buyback; Membership of company. **2. Finance FOR NON-FINANCE EXECUTIVES** **Unit: III Cost of Capital & Capital Structure** Concept of Cost of Capital and Capital Structure: Cost of Debt Capital, Cost of Preference Share Capital, Equity Share Capital, Weighted Average Cost of Capital (WACC). Meaning of Leverage. Operating Leverage, Financial Leverage, Combined Leverage. **Unit: IV Dividend Decisions & Working Capital** Types of Dividends, Dividend policies and factors affecting dividend policies. Concept of Working Capital, its components and Factors affecting working capital requirements. Contemporary issues in Finance. **3.BUSINESS MATHEMATICS AND STATISTICS** **Unit III: Bi-variate Analysis** (b) Simple and Linear Regression Analysis: Regression equations and estimation; Properties of Regression coefficients; Relationship between correlation and regression. ,	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	7. BCH 2.3: CORPORATE LAWS 8. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 9. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS
	Practical			
Month	**Types of Class**	**Topics**	**Course**	**Paper code/Name**

July	**Theory**	**1. CORPORATE LAWS** **Unit IV & V: Dividends, Audit and Winding up & The Depositories Act 1996** Provisions relating to payment of Dividend, Company Audit-auditor's qualification and disqualifications, Auditor's appointment, Rotation of auditors, Auditor's removal, Auditors' report and Auditor's powers. Winding Up: Concept and Modes of Winding Up; Provisions of winding up under Insolvency And Bankruptcy Code 2016. Definitions; Depositories system; Rights and obligations of depositories; Participants issuers and Beneficial owners; Inquiry and inspections; Penalty. **2. Finance FOR NON-FINANCE EXECUTIVES** **Unit: V Valuation of Securities** Types of Risks and Returns. Concept of Valuation, Equity Valuation & Analysis, Bond Valuation & Analysis. Portfolio Analysis **3.BUSINESS MATHEMATICS AND STATISTICS** **Unit IV: Index Numbers** Meaning and uses; Construction of index numbers: Aggregative and average of relatives– simple and weighted; Tests of adequacy of index numbers; Computation and uses of Consumer Price Index (CPI). **Unit V: Time Series** Components; additive and multiplicative models; Trend analysis - moving averages and method of least squares (linear trend).	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	10. BCH 2.3: CORPORATE LAWS 11. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 12. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS
	Practical			
	Assignment	1. Topics allotment for making the assignments from Memorandum and Association 2. Topics allotment for making the assignments from Ratios Analysis and capital Budgeting, 3. Topics allotment for making the assignments from Measures of Central Tendency and Dispersion	1. B.Com (H)– I Semester-II (B) 2. GE NON COMMERCE II 3. B.Com – I Semester-II (A)	13. BCH 2.3: CORPORATE LAWS 14. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 15. BC 2.3: BUSINESS MATHEMATICS AND

				STATISTICS
	Test	1. Test conducted on the concerned subjects after the 2. Mid-semester.	4. B.Com (H)– I Semester-II (B) 5. GE NON COMMERCE II 6. B.Com – I Semester-II (A)	16. BCH 2.3: CORPORATE LAWS 17. BCH 2.4(b): FINANCE FOR NON-FINANCE EXECUTIVES 18. BC 2.3: BUSINESS MATHEMATICS AND STATISTICS

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester II/IV/VI
(Jan-May 2021)

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
Jan	Theory	Unit 2: Cloning vectors for prokaryotes and eukaryotes: Plasmids and bacteriophages as vectors for gene cloning. Cloning vectors based on E. Coli plasmids, pBR322, pUC8, pGEM3Z. Cloning vectors based on M13 and λ bacteriophage. Vectors for yeast, higher plants and animals	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engeenering and Biotechnology
		Unit 2: Steady state kinetics, mono-substrate reactions. Michaelis-Menten equation, Lineweaver-Burk plot, Eadie-Hofstee and Hanes plot. Determination of KM and Vmax, Kcat, specificity constant	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit1:Spectroscopic Techniques: EM radiation, interaction of radiation with biomolecules, principle of UV-visible absorption spectro photometry, Lambert's Law, Beer's Law, working of a spectrophotometer	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise1: To hydrolyze DNA and separate nucleotide bases by paper chromatography	B Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization, Replication and Repair
		Exercise1: Verification of Beers Law	B Sc (H) Biological Science, I Year Semester II	BS C-3 Biophysics

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester I/III/V

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
Feb		Unit 4: Introduction of DNA into cells and selection for recombinants: Uptake of DNA by cells, preparation of competent cells. Selection for transformed cells. Identification for recombinants - insertional inactivation, blue-white selection. Introduction of phage DNA into bacterial cells	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engeenering and Biotechnology
	Theory	Unit 2: Effect of pH and temperature on the activity of enzymes. Types of bisubstrate reactions (sequential – ordered and random, ping pong reactions), examples. Differentiating bi-substrate mechanisms	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit1: Spectroscopic Techniques: Applications of UV-visible absorption spectrophotometry in biochemistry. Fluorescence spectrophotometry: Intrinsic and extrinsic fluorescence, applications	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise2: To plot ultraviolet absorption spectrum of DNA Exercise 3:Determination of DNA concentration by A260nm	B Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization, Replication and Repair
		Exercise 2: Determination of Molar Extinction Coefficient	B Sc (H) Biological Science, I Year Semester II	BS C-3 Biophysics

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester I/III/V

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
March	Theory	Unit4: Identification of recombinant phages. Introduction of DNA into animal cells, electroporation Unit 5: Methods for clone identificationThe problem of selection, direct selection, marker rescue.	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engeenering and Biotechnology
		Unit 3: Enzyme inhibition: Reversible inhibition (competitive, uncompetitive, non-competitive and mixed) and irreversible inhibition. Substrate inhibition	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 4: Centrifugation: Principle of centrifugation, basic rules of sedimentation, sedimentation coefficient. Various types of centrifuges, low speed centrifuge, high speed centrifuge and ultracentrifuge, types of rotors.	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise 4: DNA estimation by Diphenylamine method	B Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization, Replication and Repair
		Exercise 3a:. Quantitative analysis of proteins using spectrophotometer	B Sc (H) Biological Science, I Year Semester II	BS C-3 Biophysics

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester I/III/V

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
April	Theory	Unit 5: Gene libraries, identification of a clone from gene library, colony and plaque hybridization probing, methods based on detection of the translation product of the cloned gene	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engeenering and Biotechnology
		Unit 3: Enzyme inhibition: Structural analogs (allopurinol, methotrexate and trimethoprim). Mechanism based inhibitors (β-lactam antibiotics, difluoromethyl ornithine), clinical importance of enzyme inhibitors	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 4: Application of centrifugation, differential centrifugation, density gradient centrifugation- zonal and isopycnic Unit 5: Types of media, selective and enrichment media, sterilization methods, bacterial culturing, CFU determination, growth curve	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise 5: Determination of the melting temperature of DNA	B Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization, Replication and Repair
		Exercise 3b. Quantitative analysis of nucleic acids using Spectrophotometer	B Sc (H) Biological Science, I Year Semester II	BS C-3 Biophysics

SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester I/III/V

Name of the Faculty: Dr Meenakshi Kuhar **Department: Biochemistry**

Month		Topics	Course	Paper Code/Name
May	Theory	Unit 8: Expression of cloned genes: Vectors for expression of foreign genes in E. coli, cassettes and gene fusions. Challenges in producing recombinant protein in E. coli. Production of recombinant protein by eukaryotic cells. Fusion tags and their role in purification of recombinant proteins	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engeenering and Biotechnology
		Unit 6: Applications of enzymes: Enzymes as reagents; marker enzymes in diagnostics; Enzyme linked immunoassay;enzyme therapy; enzymes in research. Immobilized enzymes and industrial applications of enzymes	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 5:Generation/doubling times, cell counting, viable and non-viable. Growth and maintenance of cultures, biosafety cabinets, CO_2 incubator. Staining procedures, plating and microtomy	B Sc (Hons), I Year Semester II	GE-2 Techniques in Biochemistry
	Practical	Exercise 6: Isolation of chromosomal DNA from E coli cells	B Sc (H) Biochemistry II Year Semester IV	C-9 Gene Organization, Replication and Repair
		Exercise 4. Determination of CMC for a detergent	B Sc (H) Biological Science, I Year Semester II	BS C-3 Biophysics

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anju Kaicker **Department: Biochemistry**

Semester : II/IV/VI Session 2020-2021 FOR TBCH and SBCH

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Antigen & Immunogen, Adjuvants Antibodies: Structure & function of different class of antibodies Concept of Homeostasis and its importance Composition of blood	TBCH SBCH	BCH C-14 BCH C-8
	Practicals	Double immunodiffusion Single radial immunodiffusion	TBS	C-13
	Tutorials			
FEBRUARY	**Theory:**	Biology of the B cell, antibody production B cell receptor diversity Blood clotting mechanism, Anticlotting & fibrinolytic system Anatomy of heart and cardiac cycle	TBCH SBCH	BCH C-14 BCH C-8
	Practicals:	Immunoelectrophoresis countercurrent electrophoresis Rocket electrophoresis	TBS	C-13
	Tutorials:			

	Assignment :	Class assignments given		
MARCH	**Theory:**	Complement system, Alternate, Classical and Lectin pathways	TBCH	BCH C-14
		Vascular system, Central & peripheral nervous aystem, Action potential	SBCH	BCH C-8
	Practicals:	Purification of antibodies by ion-exchange, PBMC isolation	TBS	C-13
	Tutorials:			
	Test	Mid term test was taken		
APRIL	**Theory:**			
		Vaccines: Active and passive immunization, types of vaccines Transplantation	TBCH	BCH C-14
		Blood brain barrier, Neurotransmitters, Muscle structure and contraction	SBCH	BCH C-8
	Practicals:	Structural defence mechanisms of plants, Various infections in plants and animals, a survey	TBS	C-13
	Tutorials:			

Semester : II/IV/VI Session 2020-2021 FOR PGD

Month		Topics	Course	Paper Code/Name
APRIL	**Theory**	Cancer: TSTA & TATA, Immune mechanisms involved Transplantation Immunology	PGD	PGDMB 103
	Practicals	CH 50 test Complement fixation test	PGD	PGDMBL-103
	Tutorials			
MAY	**Theory:**	Complement ; Alternate, classical and lectin pathway, regulation of the pathway Immune response to viral diseases	PGD	PGDMB 103
	Practicals:	Digestion of antibodies and separation of fragments Linking of enzymes to antibodies	PGD	PGDMBL 103
	Tutorials:			

	Assignment :	Class assignments given		
JUNE	**Theory:**	Immune response to bacterial and helminth infections Ptotozan infections and response against them	PGD	PGDMB 103
	Practicals:	Purification of antibodies	PGD	PGDMBL 103
	Tutorials:			
	Test	Mid term test was taken		
JULY	**Theory:**	Regulation of Immune response Seminar presentation	PGD	PGDMB 103
	Practicals:	Revision , Mock test Seminars	PGD	PGDMBL 103
	Tutorials:			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr.Nandita Narayanasamy Department: BIOCHEMISTRY

Semester : IV/VI of academic year 2020-2021.

Month		Topics	Course	Paper Code/Na	Mode of teaching
January	Theory	Introduction to Animal Immunity, Haematopoesis, Granulocytes- Structure and function.	B.Sc. BIOLOGICAL Sc. (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms.	Google meet & Google classroom
		Introduction to virus, viral structure , classification and pathogenesis.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease.	Google meet & Google classroom
		Differences between plant and animal cell w.r.t structure and cell physiology. Plasma membrane of plants, Vacuole and tonoplast membrane, cell wall, plastids and peroxisomes and other microbodies	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH DSE-7 Plant Biochemistry	Google meet & Google classroom
	Practicals	DID SRID, IEP.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C 14 Immunology	Google meet & Google classroom
		Determination of Packed Cell Volume; Enumeration of Blood cells: RBC and WBC counting	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV		Google meet & Google classroom
February	**Theory**	Mononuclear phagocyte system, Dendritic cells, Natural killer cells, Primary and secondary lymphoid organs. Immunodeficiency diseases.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms	Google meet & Google classroom
		Host responses to Virus, Viral evasion of host response, Anti-viral therapy, Influenza and hepatitis infections.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease	Google meet & Google classroom

		Water potential and transport of water in plants. History of photosynthesis discovery Structure of PSI and PSII complexes, Light reaction, Cyclic and non cyclic photophosphorylation, Calvin cycle and regulation; C4 cycle and Crassulacean acid metabolism (CAM), Photorespiration	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH.DSE 7 Plant Biochemistry	Google meet & Google classroom
	Practicals:	Isolation, quantification of IgG from human sera using ion exchange chromatography. Rocket electrophoresis and PBMNC isolation.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH C 14 Immunology	Off line practicals held
		Determination of Bleeding Time and Clotting time; Preparation of blood smear and estimation of differential leucocyte count; Estimation of hemoglobin and Calculation of blood Indices; Plasma protein separation	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C 8 Human Physiology	Google meet & Google classroom
March	Theory	Antigen presentation, T-cell Maturation and Activation. Overview of cell mediated immunity.AutoImmunity.	BSc(Hons.) BIOLOGICAL SC III Year, Semester VI	BSC C 13 Defence mechanisms	Google meet & Google classroom
		HIV, Polio, Rabies and dengue virus. Protozoal infections: classification of protozoa, Amoebiasis-aeitiology,life cycle, pathogenesis,infection and therapy. Giardiasis- aeitiology,life cycle, pathogenesis,infection and therapy.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease	Google meet & Google classroom
		Introduction to plant hormones and their effect on plant growth and development, Regulation of plant morphogenetic processes by light.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester IV	DSE : Plant Biochemistry	Google meet & Google classroom
	Practicals	. Rocket electrophoresis, IEP, DID , SRID ,Active and passive hemagglutination	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BSC C 14 Immunology	Off line Practicals held
		Determination of total iron binding capacity; Pulmonary function tests, spirometry and measurement of blood pressure; Separation of isoenzymes of LDH by electrophoresis	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	BCH C8 Human Physiology	Google meet & Google classroom
	<u>Assignment</u>	1, Paper review on Infection biology 2. Analytical questions on photosynthesis and Carbon assimilation 3. Paper review on Immunobiology in living systems.	B.Sc. BIOCHEMISTRY (Hons.) III Year--B.Sc. BIOLOGICAL sc (Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease BCH DSE 7 Plant Biochemistry BSC C 13 Defence	Google class room.

				mechanisms	
April	Theory	Detailed study of Malaria: history, causative agents, vectors, life cycle, Host parasite interactions, diagnostics, drugs, vaccine development. Other diseases including Leishmaniasis and Trypanosoma infections. Fungal diseases such as Candidiasis, Sporotrichosis, Aspergillosis and Ring worm: general disease characteristics, medical importance, pathogenesis, diagnosis and treatment	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease	Google meet & Google classroom
		Biochemical host defenses, Basal resistance and basic compatibility; epidemiological and population genetics, co-evoluton in natural plant pathogen systems. Gene for gene concept; interaction in host-pathogen systems, receptor-elicitor model, plant gene-gene interaction. Cytological protection and induced resistance. Passive and active defences; Jasmonic acid, MAPKS,SROS,HPL, systemins, Heatshock proteins, oxylipin, Basic ROS cycle and adaptation during stress, Phytolexins, mechanism of production and scavenging of NO.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms	Google meet & Google classroom
		Representatives alkaloid group and their amino acid precursors, function of alkaloids, Examples of major phenolic groups; simple phenylpropanoids, Coumarins, Benzoic acid derivatives, flavonoids, tannins and lignin, biological role of plant phenolics, Classification of terpenoids and representative examples from each class, biological functions of terpenoids	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH DSE-7 Plant Biochemistry	Google meet & Google classroom
	Mid Term TEST **Practicals:**	1. Unit I and Unit III of MBID 2. Unit I and Unit II for Plant biochemistry 3. Cell and tissues of the immune system and innate immunity			Google meet & Google classroom
		Practical revision, File correction and viva voce	B.Sc. BIOCHEMISTRY Sc (Hons.) III Year, Semester VI	BCH C 14 Immunology	Google meet & Google classroom
		Case studies: Renal clearance, ECG, LFT, EEG Assignments and evaluation	B.Sc. BIOCHEMISTRY (Hons.) IIYear, Semester IV	BCH C 8: Human Physiology	Google meet & Google classroom

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shalini Sen (April 2021-July 2021)

Department: Biochemistry Semester:II

Month		Topics	Course	Paper Code/Name
April	**Theory**	1. Heterologous protein expression of cloned DNA in E.coli**:** Expression vectors (lac promoter, tryptophan promoter, Lambda cI promoter, arabinose promoter based) optimization of protein expression(using upstream and downstream signals) Fusion proteins, cell-free translation systems. RNAi vectors. 2.Methods of gene transfer to yeast ,YIp, YEp, YCp, YRp, shuttle vectors), optimization of protein expression	P.G. Diploma in Molecular and Biochemical Technology	PGDMB 202 Recombinant DNA Technology-II
	Practicals	1. Preparation of competent cells of E.coli DH5α 1.Agarose Gel Electrophoresis Polyacrylamide Gel Electrophoresis: Native and SDS	P.G. Diploma	PGDMB L205 Recombinant DNA Technology-II PGDMB L204 Biophysical Techniques-I
May	**Theory:**	1. Gene transfer to plants: Biolistics, protoplast mediated, electroporation, Agrobacterium mediated transfer (Ti plasmid, disarmed vectors, cointegrate vectors, binary vectors),virus-mediated transfer (CaMV), in planta transformation, signals for optimization of protein synthesis. 2. Gene transfer to animal cells: chemical transfection, lipofection, electroporation, gene-gun, microinjection, transient and stable transformation, optimization of protein synthesis, use of reporter genes.	P.G. Diploma	PGDMB 202 Recombinant DNA Technology-II

		3. Characterization of cloned DNA : Restriction mapping, DNA sequencing (dideoxy chain termination, chemical degradation, pyrosequencing, shotgun sequencing and contig assembly).		
	Practicals	1. Transformation of competent cells of E.coli DH5α with plasmid DNA. Calculation of transformation efficiency. 1. Southern blot on a nitrocellulose membrane 2. Western Blot/ Immunoblot	P.G. Diploma	PGDMB L205 Recombinant DNA Technology-II PGDMB L204 Biophysical Techniques-I
June	**Theory**	1 Polymerase Chain Reaction and its applications**:** components of the PCR, importance of primer designing, various thermostable enzymes vs Taq polymerase. 2. DNA markers: VNTRs and DNA fingerprinting, SNPs, RFLPs. 3. Modification of cloned DNA **:** Site directed mutagenesis(cassette mutagenesis, primer extension method, overlap extension method, megaprimer method), selection against parental phenotype. Protein engineering	P.G. Diploma	PGDMB 202 Recombinant DNA Technology-II
June	**Practicals**	1. Transformation of competent cells of E.coli DH5α with plasmid DNA. Calculation of transformation efficiency. 1. Southern blot on a nitrocellulose membrane 2. Western Blot/ Immunoblot	P.G. Diploma	PGDMB L205 Recombinant DNA Technology-II PGDMB L204 Biophysical Techniques-I

	Student presentations:	Topics of interest to students		
July	**Theory:**	1. **Applications of recombinant DNA technology :** Transgenic animals,Transgenic plants, Gene therapy, Pharmaceutical products, Ethical issues. 2. Knock out ,knock down, RNAi	PG Diploma	PGDMB 202 Recombinant DNA Technology-II
	Practicals:	1. Effect of alkaline phosphatase on plasmid DNA recircularization. 2. Revision 1. 2-D Gel electrophoresis	PG Diploma PG Diploma	PGDMB L205 Recombinant DNA Technology-II PGDMB L204 Biophysical Techniques
	Midterm Test	Based on theory covered thus far		

SEMESTER WISE TEACHING PLAN 2020-2021

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. VANDANA MALHOTRA
Department: BIOCHEMISTRY
Teaching Mode: Online (Google Classroom & MS Teams) **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	**Unit 1:** Classification of infectious agents Bacteria, Viruses, protozoa and fungi. Source, reservoir and transmission of pathogens, Antigenic shift and antigenic drift. Host parasite relationship, types of infections associated with parasitic organisms **No. of Hours: 12**	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		Unit 1. Building blocks of DNA structure, Watson and Crick model, features of the double helix, various forms of DNA, denaturation and renaturation of DNA, hyperchromicity, melting temperature, factors affecting Tm of DNA molecules. Supercoiling of DNA, linking number, topoisomerases and their classification. Topoisomerase inhibitors and their clinical importance. **No. of Hours: 10**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
	Practical	• Gram Staining • Permanent slides of pathogens. Mycobacterium tuberculosis, Leishmania, Plasmodium falciparum	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Estimation of serum urea. • Estimation of serum uric acid.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
		• Retrieval of Amino Acid Sequences from NCBI • Protein Structure Retrieval using PDB and visualization using Jmol	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH SEC 4 Bioinformatics
	Assignments	Related to the topics covered so far.		
FEBRUARY	Theory	**Unit 2.** Overview of diseases caused by bacteria Detailed study of tuberculosis: History, causative agent, molecular basis of host specificity, infection and pathogenicity, Diagnostics, Therapeutics, inhibitors and vaccines. Drug resistance and implications	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases

		on public health. Other bacterial diseases including Typhoid, Diphtheria, Pertussis, Tetanus, Typhoid and Pneumonia. **No. of Hours: 18**		
		UNIT IV: Recombination and transposition of DNA Transposition, the three classes of transposable elements-DNA transposons, virus-like retrotransposons and poly-A retrotransposons. DNA transposition by cut and paste and replicative mechanism. **No. of Hours: 12**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
	Practical	• Permanent slides of pathogens. Mycobacterium tuberculosis, Leishmania, Plasmodium falciparum **(Contd)** • Dot Blot ELISA • WIDAL Test	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Estimation of serum creatinine • Assay of serum transaminases – SGOT and SGPT. • **Continuous evaluation**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
		• Pairwise Alignment using BLAST • Multiple Sequence Alignment using ClustalW	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH SEC 4 Bioinformatics
	Assignments	• Related to the topics covered		
March	Theory	**Unit 2**. Overview of diseases caused by bacteria **(Contd.)** Detailed study of tuberculosis: History, causative agent, molecular basis of host specificity, infection and pathogenicity, Diagnostics, Therapeutics, inhibitors and vaccines. Drug resistance and implications on public health. Other bacterial diseases including Typhoid, Diphtheria, Pertussis, Tetanus, Typhoid and Pneumonia. **No. of Hours: 18**	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH DSE 4 Molecular Basis of Infectious Diseases
		UNIT V: Molecular basis of mutations Importance of mutations in evolution of species. Types of mutations - transition, transversion, frame shift mutations. DNA damage by hydrolysis, alkylation, oxidation and radiation. Mutations caused by base analogs and intercalating agents. Ames test. **No. of Hours: 6**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
	Practical	**OFFLINE MODE (Sem 6 Only)** • Gram Staining • Permanent slides of pathogens. Mycobacterium tuberculosis, Leishmania,	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases

		Plasmodium falciparum • Dot Blot Elisa • WIDAL Test		
		• Estimation of Glutamate Dehydrogenase enzyme in the serum. • Case studies Repeat of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
		• Primary sequence analysis using Protparam Tool • Secondary Structural elements Prediction • Transmembrane Helices Prediction using TMHMM • Mid Term Assignment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH SEC 4 Bioinformatics
April	Theory	**Unit 5** Overview of diseases caused by other organisms: Fungal diseases, General characteristics. Medical importance of major groups, pathogenesis, treatment. **No. of Hours: 10**	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		UNIT VI: Various modes of DNA repair Replication errors and their repair, mismatch repair system. Repair of DNA damage-direct reversal of DNA damage, base excision repair, nucleotide excision repair, recombination repair, trans-lesion DNA synthesis. DNA repair and diseases. **No. of Hours: 6**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
	Practical	• Acid Fast Staining • PCR Based Diagnostics • Revision of any previous experiment	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH DSE4 Molecular Basis of Infectious Diseases
		• Revision of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-10: Metabolism of Amino Acids and Nucleotides
		• To predict protein structure using Homology Modelling and validating by Ramachandran Plot • To perform gene prediction using GenScan	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH SEC 4 Bioinformatics
Mid-term Class Tests and Assignment Submission				

SEMESTER WISE TEACHING PLAN-2020-21 (Even SEM)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kameshwar Sharma YVR, Assistant Professor
Department: Biochemistry
Semester: II/IV/VI (Even Semester)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**			
	Practicals	1. Protein estimation by Biuret/Lowry's method 2. Separation of amino acids by Thin layer chromatography (TLC)	Biochemical Techniques _ SEC	B.Sc. Hons Biological Science Sem IV
	Tutorials			
FEBRUARY	**Theory:**			

	Practicals:	1. Separation of sugars/bases using paper chromatography 2. Separation by Ion Exchange/ 3. Gel filteration Chromatography 4. Ammonium Sulfate Precipitation	Biochemical Techniques _ SEC	B.Sc. Hons Biological Science Sem IV
	Tutorials:	Class Tests / assignments		
MARCH	**Theory:**			
	Practical	1. To perform agarose gel electrophoresis 2. Isolation of mitochondria and assay of its marker enzyme SDH	Biochemical Techniques _ SEC	B.Sc. Hons Biological Science Sem IV
	Tutorials	Assignments / Tests		
	<u>Test</u>	**MID TERM Exams**		

APRIL	**Theory:**	Sample Preperation Protein Purification .	**B.Sc(H) Biochemistry Sem II GE**	Sem – II First Year
		Blotting Techniques	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**

	Practicals:	Southern Blot, Western Blot Partial purification of an enzyme using bulk methods or chromatography	**Biophysical Techniques - II** Enzymes	**PG Diploma in Molecular and Biochemical Technology** BCH C4 Enzymes Semester – II Year I
	Tutorials:			
MAY	**Theory:**	Chromatography and Types (TLC, GFC, IEC) Radioactive Materials	**B.Sc(H) Biochemistry Sem II GE** **Biophysical Techniques - II**	**BCH GE- 2 Biochemical Techniques** **PG Diploma in Molecular and Biochemical Technology**
	Practicals:	• Introduction to Bioinformatics • J mol/Pymol and Java • PDB • BLAST • Primary Structure Prediction and Consensus Assay to determine activity and specific activity of an enzyme	**Biophysical Techniques - II** Enzymes	**PG Diploma in Molecular and Biochemical Technology** BCH C4 Enzymes Semester – II Year I

JUNE	**Theory:**	Affinity Chromatography Electrophoresis - Introduction Fermentation Technology Bioinformatics- Introduction and Database	**B.Sc(H) Biochemistry Sem II GE** **Biophysical Techniques - II**	**BCH GE- 2 Biochemical Techniques** **PG Diploma in Molecular and Biochemical Technology**
	Practicals:	• Clustal Omega • Tertiary Structure Prediction • **Evaluation** • Gene Structure Prediction (GENSCAN) Progress curve for an enzyme 2. Effect of pH/temperature on enzyme activity 3. Determination of KM and Vmax of an enzyme using Lineweaver-Burk plot	**Biophysical Techniques - II** Enzymes	**PG Diploma in Molecular and Biochemical Technology** BCH C4 Enzymes Semester – II Year

JULY	**Theory:**	Electrophoresis (SDSPAGE) IEF, 2 D Gel Electrophoresis Microscopy Bioinformatics- Phylogenetic analysis Protein structure prediction Multiple Sequence Alignment	**B.Sc(H) Biochemistry Sem II GE** **Biophysical Techniques - II**	**BCH GE- 2 Biochemical Techniques** **PG Diploma in Molecular and Biochemical Technology**

	Practicals:	Transmembrane Prediction Secondary structure prediction - Ramachandran Plots Calculation of inhibitory constant (Ki) for an enzyme 2. Continuous assay of an enzyme	**Biophysical Techniques - II** Enzymes	**PG Diploma in Molecular and Biochemical Technology** BCH C4 Enzymes Semester – II Year

AUGUST	**Theory:**	REVISION CLASSES AND EXAM PREPERATION	**B.Sc(H) Biochemistry Sem II GE** **Biophysical Techniques - II**	**BCH GE- 2 Biochemical Techniques** **PG Diploma in Molecular and Biochemical Technology**
	Practicals:	Preparation of Mock Practicals and **Main Practical Examinations**	**Biophysical Techniques - II**	**PG Diploma in Molecular and Biochemical Technology**

DR. KAMESHWAR SHARMA YVR
Assistant Professor
Department of Biochemistry

SEMESTER WISE TEACHING PLAN 2020-2021

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NIMISHA SINHA
Department: BIOCHEMISTRY
Teaching Mode: Online **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	**Unit 3: Respiration:** Overview of glycolysis, Alternative reactions of glycolysis, Regulation of plant glycolysis, Translocation of metabolites across mitochondrial membrane, TCA cycle, Alternative NAD(P)H oxidative pathways; Cyanide resistant respiration. No. of HOURS: 8	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		Unit 2 Genes and genomic organization No. of HOURS: 10 Genome sequence and chromosome diversity, definition of a gene, organization of genes in viruses, bacteria, animals and plants. Nucleosome structure and packaging of DNA into higher order structures.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
		Unit I: Introduction to Metabolism Principles of bioenergetics, standard free energy change, metabolic roles of ATP, phosphoryl group transfer, nucleotidyl group transfer. Experimental approaches to study of metabolism; primary and secondary metabolism. Energetics. Classification of organisms based on utilization of carbon and energy sources.	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS BS C-10 Metabolism And Integration
	Practical	• Isolation of Plasmid DNA • Restriction enzyme digestion of plasmid DNA and size estimation of fragments. • Isolation of plasmid DNA from *E.coli* and restriction enzyme digestion and molecular weight determination	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		• Estimation of serum urea. • Estimation of serum uric acid.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		• Ultraviolet absorption spectrum of DNA and RNA. • Determination of DNA and RNA concentration by A260nm. • Absorption spectrum of bases. (Value added) • Practice assignment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09 GENE ORGAIZATION REPLICATION AND REPAIR
	Assignments	Related to the topics covered so far.		
FEBRUARY	Theory	**Unit 3: Biological Nitrogen fixation** by free living and in symbiotic association, structure and function of enzyme Nitrogenase. Nitrate assimilation: Nitrate and Nitrite reductase.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry

		UNIT III: Replication of DNA No. of hours: 16 General features of replication, the chemistry of DNA synthesis, DNA polymerase, the replication fork, enzymes and proteins in DNA replication, E coli DNA polymerases, stages of replication-initiation, elongation and termination, origin of replication, relationship between replication and cell division	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
		Unit 2: Lipid metabolism - Mobilization of triglycerides, metabolism of glycerol, β-*oxidation* of saturated, monounsaturated and poly-unsaturated fatty acids, even and odd chain fatty acids. .	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS BS C-10 Metabolism And Integration
	Practical	• Designing of primers for any selected genes. • Demonstration of PCR technique.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		• Estimation of serum creatinine • Assay of serum transaminases – SGOT and SGPT. • **Continuous evaluation**	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		• Verification of Chargaff's rule by paper chromatography. • Determination of the melting temperature and GC content of DNA.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09 GENE ORGAIZATION REPLICATION AND REPAIR
	Assignments	Related to the topics covered		
MARCH	Theory	Unit 3 (contd) Primary and secondary ammonia assimilation in plants; ammonia assimilation by Glutamine synthetase-glutamine oxoglutarate amino transferase (GS-GOGAT) pathway. Seed storage proteins in legumes and cereals. Unit 6: Cell and tissue culture techniques, types of cultures: organ and explants culture, callus culture, cell suspension culture and protoplast culture.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		UNIT III: Replication of DNA contd. Replication in eukaryotes, end replication problem, telomerase, various modes of replication. Comparison of replication in prokaryotes and eukaryotes. Inhibitors of DNA replication and applications in medicine.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-09: Gene Organization Replication and Repair
		Lipid metabolism contd. Ketogenesis and significance, Biosynthesis of C-16 palmitic acid, brief overview of cholesterol metabolism and lipoprotein cycle	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS BS C-10 Metabolism And Integration
	Practical	**TBCH Via Offline Mode:** • Preparation of competent cells by calcium chloride method • Transformation of E coli cells with plasmid DNA • Blue white selection • Repeat any previous experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		• Estimation of Glutamate Dehydrogenase enzyme in the serum. • Case studies • Repeat of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES

		• Isolation of chromosomal DNA from E. coli cells. • Repeat of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09 GENE ORGAIZATION REPLICATION AND REPAIR
APRIL	Theory	**Unit 6: Plant regeneration pathways:** organogenesis and somatic embryogenesis. Applications of cell and tissue culture and somoclonal variation.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		UNIT IV: Recombination and transposition of DNA No. of hours: 12 Homologous recombination, biological role and models for homologous recombination, proteins and enzymes in homologous recombination, site-specific recombination, serine and tyrosine recombinases.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09: Gene Organization Replication and Repair
		Unit III: Amino Acid and Nucleotide Metabolism Protein catabolism – Transamination and deamination, Urea cycle, glycogenic and ketogenic amino acids, secondary metabolites from amino acids. Nucleotide metabolism – *De novo* and salvage pathway, porphyrin catabolism. Nutritional disorders-Kwashiorkor and Marasmus	B.Sc. BIOLOGICAL SCIENCES Hons.) II Year, Semester IV	CBCS BS C-10 Metabolism And Integration
	Practical	• Revision of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		• Revision of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		• Revision of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09 GENE ORGAIZATION REPLICATION AND REPAIR
MID TERM TEST AND ASSIGNMENT SUBMISSION				

SEMESTER WISE TEACHING PLAN 2020-21
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr.Ravindra Varma Polisetty
Department: Biochemistry **Even Semester : II/IV/VI**

Month		Topics	Teaching Mode	Course	Paper Code/Name
JANUARY	Theory	1. De novo synthesis of purine and pyrimidine nucleotides, regulation and salvage pathways.	Online (Microsoft Teams)	SBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides
	Practicals	1. Estimation of Random Blood Glucose – Glucose Oxidase method 2. Estimation of Oral Glucose tolerance test (O-GTT).	Online (Microsoft Teams)	SBS	BS C-10: Metabolism and Integration
	Tutorials				
FEBRUARY	Theory:	1. Digestion of nucleic acids, degradation of purine and pyrimidine nucleotides. 2. Inhibitors of nucleotide metabolism. 3. Disorders of purine and pyrimidine metabolism – Lesch-Nyhan syndrome, Gout, SCID, adenosine deaminase deficiency.	Online (Microsoft Teams)	SBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides
	Practicals:	1. Determination of Lipid Profile: Total Cholesterol (TC), High Density Lipoproteins (HDL) and Triglycerides (TG).	Online (Microsoft Teams)	SBS	BS C-10: Metabolism and Integration
	Tutorials:				
MARCH	Theory:	1. Biosynthesis of deoxyribonucleotides and its regulation, conversion to triphosphates, 2. biosynthesis of coenzyme nucleotides. 3. Biosynthesis of creatine and creatinine, polyamines (putresine, spermine, spermidine), catecholamines (dopamine, epinephrine, norepinephrine) and neurotransmitters (serotonin, GABA).	Online (Microsoft Teams)	SBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides
	Practicals:	1. Estimation of Bilirubin in serum/plasma sample. 2. Estimation of creatinine in serum/plasma sample.	Online (Microsoft Teams)	SBS	BS C-10: Metabolism and Integration
	Tutorials:				
	Assignments	Assignment -1	Online (Microsoft Teams)		

APRIL	Theory:	1. Porphyrin biosynthesis, catabolism and disorders of porphyrin metabolism. 1. General characteristics of enzymes; 2. Nature of enzymes - protein and non-protein (ribozymes – RNaseP, self-splicing introns, abzymes). 3. Co-factor and prosthetic group, apoenzyme, holoenzyme. 4. Classification and nomenclature of enzymes. 5. Enzyme assays-discontinuous, continuous, coupled assays; 6. Enzyme activity, specific activity, units to express enzyme activity. 7. Features of enzyme catalysis, factors affecting the rate of chemical reactions, collision theory, activation energy and transition state theory. 8. Catalysis, reaction rates and thermodynamics of reaction.	Online (Microsoft Teams)	SBCH FBCH	BCH C-10 Metabolism of Amino Acids and Nucleotides BCH C-4: Enzymes
	Practicals:	1. Partial purification of an enzyme using bulk methods or chromatography 2. Estimation of proteins using UV-absorbance and Biuret method. 3. Estimation of proteins using Lowry/Bradford method. 1. Estimation of Urea. 2. Estimation of SGPT and SGOT in serum/plasma sample.	Online (Microsoft Teams) Google meet	FBCH FBCH SBS	BCH C-4: Enzymes BCH C-3: Proteins BS C-10: Metabolism and Integration
	Tutorials:				
	Test	Mid-term Test			
MAY	Theory:	1. Catalytic power and specificity of enzymes (concept of active site), Fischer's lock and key hypothesis, Koshland's induced fit hypothesis. 2. General features - proximity and orientation, strain and distortion, acid-base and covalent catalysis (chymotrypsin, lysozyme). 3. Metal activated enzymes and metalloenzymes, transition state analogues.	Online (Microsoft Teams)	FBCH	BCH C-4: Enzymes
	Practicals:	1. Assay to determine activity and specific activity of an enzyme 1. Determination of isoelectric pH of casein. 2. Ammonium sulphate fractionation of	Online (Microsoft Teams) Google meet	FBCH FBCH	BCH C-4: Enzymes BCH C-3: Proteins

		proteins.			
	Tutorials:				
JUNE	Theory:	1. Coenzymes in enzyme catalyzed reactions. Structure, vitamin precursors, types of reaction involved in: TPP, FAD, NAD, pyridoxal phosphate, biotin, coenzyme A, tetrahydrofolate and lipoic acid. 2. Control of activities of single enzymes and metabolic pathways, feedback inhibition, allosteric modulation (aspartate transcarbamoylase), regulation by reversible covalent modification (glycogen phosphorylase and glycogen synthase). 3. Proteolytic cleavage (zymogens-chymotrypsinogen, trypsinogen, procaspases). 4.	Online (Microsoft Teams)	FBCH	BCH C-4: Enzymes
	Practicals:	1. Progress curve for an enzyme 2. Effect of pH/temperature on enzyme activity 3. Determination of KM and Vmax of an enzyme using Lineweaver-Burk plot 1. Separation of proteins using anion-exchange chromatography (demonstration). 2. SDS-PAGE analysis of proteins (demonstration).	Online (Microsoft Teams) Google meet	FBCH FBCH	BCH C-4: Enzymes BCH C-3: Proteins
	Tutorials:				
JULY	Theory:	1. Regulation of multi-enzyme complex, properties (pyruvate dehydrogenase). 2. Isoenzymes - properties and physiological significance (lactate dehydrogenase, hexokinase and glucokinase).	Online (Microsoft Teams)	FBCH	BCH C-4: Enzymes
	Practicals:	1. Calculation of inhibitory constant (Ki) for an enzyme 2. Continuous assay of an enzyme 1. Molecular Visualization Softwares: Pymol and Rasmol for protein structures from PDB	Online (Microsoft Teams) Google meet	FBCH FBCH	BCH C-4: Enzymes BCH C-3: Proteins
	Tutorials:				

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sarika Yadav **Department: BIOCHEMISTRY** **Semester: IV/VI (2020-2021)**

Month		Topics	Course	Paper Code/Name	Platform used for teaching
January-2021	**Theory**	Digestion and absorption of dietary proteins. Role of essential and non-essential amino acids in growth and development. Metabolic fates of amino groups. Transamination, role of pyridoxal phosphate, glucose-alanine cycle, Kreb's bicycle	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		Inherited metabolic diseases: Alkaptonuria, Phenylketonuria, Glycogen storage diseases: Von Gierke, Cori and McArdle, Lipid storage diseases: Gauchers diseases, Niemann-Pick disease,	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails
		Practicals			
	Practical	Determination of Packed Cell Volume; Enumeration of Blood cells: RBC and WBC counting	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		Separation of photosynthetic pigments by TLC; Culture of plants (explants)	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Google meet, Google classroom and emails

February 2021	**Theory**	urea cycle, its regulation and inherited defects of urea cycle. Gama-glutamyl cycle; Catabolic pathways of individual amino acids. Glucogenic and ketogenic amino acids. Metabolism of one carbon units.	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		SCID: Adenosine Deaminase deficiency; Autoimmune diseases: Concepts in immune recognition-self and non-self-discrimination, organ specific autoimmune diseases-Hashimoto's thyroiditis, Graves' disease, Myasthenia Gravis, Diabetes Melitus-I, Systemic diseases: Systemic lupus erythematosus (SLE), Rheumatoid arthritis.	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails
	Practical:	Determination of Bleeding Time and Clotting time; Preparation of blood smear and estimation of differential leucocyte count; Estimation of hemoglobin and Calculation of blood Indices; Plasma protein separation	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		Estimation of carotene/ascorbic acid/phenols/tannins in fruits and vegetables	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Google meet, Google classroom and emails AND Performed in the Department Laboratory also
March 2021	**Theory**	Disorders of amino acids metabolism, phenylketonuria, alkaptonuria, maple syrup urine disease, methyl malonic acidemia (MMA), homocystinuria, and Hartnup's disease. Nitrogen cycle, incorporation of ammonia into biomolecules. Overview of amino acid synthesis.	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		Hormonal imbalances: Hormonal imbalances leading to disease: Diabetes Insipidus, Acromegaly, Gigantism, Dwarfism, Goitre, Cretinism	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails

	Practical	Determination of total iron binding capacity; Pulmonary function tests, spirometry and measurement of blood pressure; Separation of isoenzymes of LDH by electrophoresis.	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		• Extraction and assay of Urease from Jack bean (Performed in the college laboratory also); Induction of hydrolytic enzymes proteinases /amylases/lipase during germination	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Performed in Department laboratory as well as online: Google meet, Google classroom and emails
• **April 2021**	**Theory**	• Biosynthesis and regulation of non-essential amino acids. Protein calorie malnutrition- Kwashiorkar and Marasmus, N-balance. Integration of metabolic pathways (carbohydrate, lipid and amino acid metabolic pathways), tissue specific metabolism (brain, muscle, and liver). • Mid-Sem exam	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-10: Metabolism of Amino Acids and Nucleotides	Google meet, Google classroom and emails
		• Cushing and Conn's syndrome, Addison's disease. • Mid-Sem Exam	B. Sc. (H) Biochemistry II Yr, Sem IV	BCH GE-4: Biochemical Correlations of Diseases	Google meet, Google classroom and emails evaluations
	Practical	• Case studies: Renal clearance, ECG, LFT, EEG • Assignments and evaluation	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: Human Physiology (PRACTICALS)	Google meet, Google classroom and emails
		Assignments and evaluation	B. Sc (H) Biochemistry, III Yr, Sem VI	DSE-7: PLANT BIOCHEMISTRY (PRACTICALS)	Google meet, Google classroom and emails

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sarika Yadav **Department: BIOCHEMISTRY** **Semester: II (2020-2021)**

First Year; Semester: II (2020-2021) (Session started in November- 2020) (Even Sem)

Month		Topics	Course	Paper Code/Name	Platform used for teaching
April 2021	**Theory**	Extraction, purification and characterization of proteins: Solubilization of proteins from their cellular and extracellular locations. Use of mechanical and chemical methods, homogenization, ultrasonication, French press and centrifugation. Ammonium sulphate fractionation, solvent fractionation, dialysis and lyophilization Ion-exchange chromatography, molecular sieve chromatography	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins	Google meet, Google classroom and emails
		Practicals			
	Practical	Estimation of proteins using UV-absorbance and Biuret method.	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins	Google meet, Google classroom and emails

May 2021	**Theory**	hydrophobic interaction/reverse phase chromatography, affinity chromatography, HPLC and FPLC. Determination of purity, molecular weight, extinction coefficient and sedimentation coefficient.	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins	Google meet, Google classroom and emails
	Practical:	• Estimation of proteins using Lowry/ Bradford method. • Assignment and eveluation	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins (Practicals)	Google meet, Google classroom and emails
June- 2021	**Theory**	Electrophoresis: IEF, SDS-PAGE and 2-D gel electrophoresis. Denaturation and renaturation of Ribonuclease A – discovery of protein folding. Introduction to thermodynamics of folding and molten globule. Assisted folding by molecular chaperones, chaperonins and PDI. Defects in protein folding. Diseases associated with misfolding – Alzheimer's and Prion based.	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins	Google meet, Google classroom and emails
	Practical	Determination of isoelectric pH of casein; Ammonium sulphate fractionation of proteins; Separation of proteins using anion-exchange chromatography (demonstration)	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins (Practicals)	Google meet, Google classroom and emails
July- 2021	**Theory**	Transport protein: Haemoglobin - Oxygen binding curves, influence of 2,3-BPG, CO2 and H^+, Hill plot, Cooperativity between subunits and models to explain the phenomena - concerted and sequential models. Haemoglobin disorders-sickle cell anemia, thalassemias. Motor proteins- Actin and myosin. Defense proteins- Antibodies, Membrane proteins- Integral and membrane associated proteins. Hydropathy plots to predict transmembrane domains.	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins	Google meet, Google classroom and emails

	Practical	SDS-PAGE analysis of proteins (demonstration); Molecular Visualization Softwares: Pymol and Rasmol for protein structures from PDB	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins (Practicals)	Google meet, Google classroom and emails

SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Meeta Bhardwaj **Department: Biochemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Anatomical barriers, cell types of innate immunity, soluble molecules and membrane associated receptors (PRR), connections between innate and adaptive immunity, cell adhesion molecules, chemokines, leukocyte extravasation, localized and systemic response	BSc (H) Biological Sciences Sem VI	BS C 13
		Pellagra, Anaemia, Night blindness, Rickets, Osteomalacia, Osteoporosis, Obesity, Cardiovascular diseases, Atherosclerosis, Diabetes Mellitus-II, Inflammatory Bowel Disease (IBD).	BSc (H) Biochemistry Sem IV	BCH GE 7
		Restriction and modification systems, restriction endonucleases and other enzymes used in manipulating DNA molecules. Ligation of DNA molecules. DNA ligase, sticky ends, blunt ends, linkers and adapters, homopolymer tailing, Synthetic oligonucleotides.	BSc (H) Biochemistry Sem VI	BCH C 13
	Practicals	Isolation of plasmid DNA from E. coli cells. Digestion of plasmid DNA with restriction enzymes.	BSc (H) Biochemistry Sem VI	BCH C 13
		Anthrompometric measurements: BMI, Waist/Hip Ratio, Mid Arm Muscle Area (MAMA), Mid Arm Area (MAA).	BSc (H) Biochemistry Sem VI	BCH GE 7

FEBRUARY	**Theory:**	Complement activation by classical, alternate and MBL pathway, biological consequences of complement activation, regulation and complement deficiencies. Antigens and haptens, Factors that dictate immunogenicity, B and T cell epitopes.	BSc (H) Biological Sciences Sem VI	BS C 13
		Alzheimer's, Huntington's diseases, Kuru, Creutzfeldt-Jakob disease, Sickle Cell anaemia, Thalassemia.	BSc (H) Biochemistry Sem IV	BCH GE 7
	Practicals:	Amplification of a DNA fragment by PCR	BSc (H) Biochemistry Sem VI	BCH C 13
		Determination of blood Lipid Profile: Triglyceride, Cholesterol Haemoglobin estimation	BSc (H) Biochemistry Sem IV	BCH GE 7
MARCH	**Theory**	Structure and distribution of classes and subclasses of immunoglobulins (Ig), Ig fold, effector functions of antibody, antigenic determinants on Ig and Ig super family. Generation of antibody Diversity. Monoclonal antibodies;	BSc (H) Biological Sciences Sem VI	BS C 13
		Viral infection: Polio, Measles, Mumps, influenza, HIV. Bacterial infections: Tetanus, Diphtheria, Tuberculosis, Typhoid, Cholera.	BSc (H) Biochemistry Sem IV	BCH GE 7

	Practicals	Offline practical - plasmid isolation, restriction digestion, PCR demonstration and Transformation Calcium estimation in serum 6. Estimation of blood glucose	BSc (H) Biochemistry Sem VI BSc (H) Biochemistry Sem VI	BCH C 13 BCH GE 7	
APRIL	**Theory**	Immunological methods- Antigen-antibody interactions; Immunity in Plants , Protozoan: Malaria and Trypanosomiasis. Parasitic infections: Leishmania.	BSc (H) Biological Sciences Sem VI BSc (H) Biochemistry Sem IV	BS C 13 BCH GE 7	
	Practicals	PCR Amplification Phage titration Continuous evaluation	PG Diploma Sem II BSc (H) Biochemistry Sem IV	PGD MB 202 BCH GE 7	
MAY	**Practicals**	Project Based Evaluation – Gene Cloning	PG Diploma Sem II	PGD MB 202	

June	**Practicals**	Project Based Evaluation – Gene Cloning	PG Diploma Sem II	PGD MB 202
July	**Practicals**	Project Based Evaluation – Gene Cloning	PG Diploma Sem II	PGD MB 202

Name of the Faculty : Dr. PILLI RAJESWARI
Department :BIOCHEMISTRY Semester-II
Teaching Mode : ONLINE

Month		Topics	Course	Paper Code Name
APRIL	**Theory**	**Unit-1 : Separation of macro molecules by electrophoresis: No of Hours:8** Theory of polyacrylamide gel electrophoresis: native and SDS PAGE, reducing and non reducing gels, detection of protein bands in gels- Coomassie blue staining, silver staining, fluorescence staining, molecular weight determination by SDS PAGE recovery of proteins from the gel, Theory of Agarose gel electrophoresis : Procedure and Applications, Gel properties, Analysis of DNA fragments after digestion by Restriction Endonuleases..	**PG -One year Course Diploma II year - Semester-II**	**PGDMB-201 Biophysical Techniques-II**
		Unit 1 : The response of T cells to antigens : No of Hours:6 T cell receptor, T cell accessory membrane molecules, thymic selection of T cell repertoire, organization and rearrangement of TCR genes,	**PG -One year Course Diploma II year - Semester-II**	**PGDMB-203 Immunology-II**
		Unit-1 Biomolecules :No of hours:5 Amino acids, Amino acid structure, Physical properties: pI of amino acids, amino acids as ampholytes, melting point, optical rotation, UV absorption. peptide bond, peptides and proteins.	**B.SC Biological Science First year Semester-II**	**(CBCS) Biophysics-(BS C-3)**

	Practical	1. Ion exchange chromatography-Principle and mechanism 2. Purification of IgG by ion exchange chromatography 3. Preparation of IgG fraction using Protein A Sepharose column	**PG -One year Course Diploma II year - Semester-II**	**PGDMB-203 Immunology-II**
		1. Separation of amino acid acids by paper chromatography 2 Separation of amino acid acids by TLC/ chromatography 3. Revise again to write in detail in sheet.	**B.SC (Hons) Biochemistry First year Semester-II**	**(CBCS) Techniques in Biochemistry BCH GE-2**
May	**Theory**	**Unit-1** Isoelectric focusing of proteins,Practical Aspects of IEF ,One dimensional and Two dimensional gel electrophoresis, gradient gel electrophoresis, Differential gel electrophoresis(DIGE). Pulsed Field Gel Electrophoresis. Afinity staining,	**PG -One year Course Diploma II year - Semester-II**	**PGDMB-201 Biophysical Techniques-II**
		Unit-1 Cell mediated immune response : generation of cytotoxic cells, CTL mediated cytotoxicity, Apoptosis, Effector CD8+ cells ,Memory cells, differentiation and activation, response of NK cells	**PG -One year Course Diploma II year - Semester-II**	**PGDMB-203 Immunology-II**

		Unit-1 Types of DNA. Physical properties of DNA - Effect of heat on physical properties of DNA (Viscosity, buoyant density)	**B.SC (Hons) Biochemistry First year Semester-II**	**CBCS) Techniques in Biochemistry BCH GE-2**
	Practical	1.Dot ELISA 2.Revise how to write the Purification of IgG by ion exchange chromatography	**PG -One year Course Diploma II year - Semester-II**	**PGDMB-203 Immunology-II**
		1. Estimation of proteins by Biuret method 2. To perform agarose gel electrophoresis	**B.SC (Hons) Biochemistry First year Semester-II**	**(CBCS) Techniques in Biochemistry BCH GE-2**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NITIKA KAUSHAL

Department: BIOCHEMISTRY

Semester: II/IV/VI (2020 - 21)

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Unit 3**: Respiratory physiology - Organization of the pulmonary system, site of gas exchange, Ventilation and lung mechanics. Inspiration, Expiration, Lung compliance and its determinants. Lung Volumes and Capacities. Transport of oxygen and carbon dioxide in blood. Haldane and Bohr's effect. Transport of hydrogen ions between tissues and lungs. Control of respiration. Hering-Breuer reflex. Asthma, Chronic Obstructive Pulmonary Disease (COPD), Hypoxia, Emphysema	B Sc (H) Biochemistry	BCH C-8: Human Physiology
		Unit 2: Anatomical barriers, cell types of innate immunity, soluble molecules and membrane associated receptors (PRR), connections between innate and adaptive immunity, cell adhesion molecules, chemokines, leukocyte extravasation, localized and systemic response	B Sc (H) Biochemistry	BCH C14: Immunology
		Unit 2: Carbohydrates metabolism - Glycolysis, alcoholic and lactic acid fermentation, Pasteur Effect, gluconeogenesis, Cori cycle, Glucose-alanine cycle, futile cycle. TCA cycle, HMP shunt	B Sc (H) Biological Sciences	BS C10: Metabolism and Integration
	Practical	Effect of isotonic, hypotonic and hypertonic saline solutions on erythrocytes Enumeration of white blood cells using haemocytometer	B.Sc. Biological Science (H) II Yr, Sem III	BS C8: Systems Physiology
		Gram staining	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-4 MBID
		Induction of hydrolytic enzymes proteinases /amylases/lipase during germination	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-5 Plant Biochemistry
February	**Theory**	**Unit 3:** Renal physiology - Anatomy of the kidney and the nephron. Regulation of renal blood flow. Cell biology of the Bowmans' capsule. Physiology of glomerular filtration and GFR. Tubular processing of the glomerular filtrate. Micturition. Regulation of ion and water balance. Urine concentration: The counter current multiplier system. Blood buffer systems, renal responses to acidosis and alkalosis. Assessment of	B Sc (H) Biochemistry	BCH C-8: Human Physiology

		kidney function. Glomerular nephritis. Dialysis: Hemodialysis and peritoneal dialysis. Diuretics		
		Unit 3: Antigens and haptens, factors that dictate immunogenicity, B and T cell epitopes. **Unit8**: General organization and inheritance of MHC, structure, distribution and role of MHC class I and class II proteins, linkage disequilibrium, pathways of antigen processing and presentation.	B Sc (H) Biochemistry	BCH C14: Immunology
		Unit 2: Glycogenolysis & glycogen synthesis, Disorders associated with defects in carbohydrate metabolism- a brief account on fructose intolerance, lactose intolerance, lactic acidosis, disorders related to glycogen metabolism, genetic deficiency of Glucose-6-phosphate dehydrogenase, Galactosemia	B Sc (H) Biological Sciences	BS C10: Metabolism and Integration
	Practical	Preparation of temporary mounts: nerve cells Preparation of blood smear and Differential Leucocyte Count (D.L.C)	B.Sc. Biological Science (H) II Yr, Sem III	BS C8: Systems Physiology
		Gram staining Acid fast staining	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-4 MBID
		Estimation of carotene/ascorbic acid/phenols/tannins in fruits and vegetables	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-5 Plant Biochemistry
March	**Theory**	**Unit 3:** Gastrointestinal and hepatic physiology - Histology of the gastrointestinal tract. Propulsion and motility of food and digested material. Enteric reflexes. Secretory functions of the gastrointestinal tract, digestion and absorption of macronutrients and micronutrients. Peptic ulcer, Sprue, Celiac disease, IBD, regurgitation. Anatomy of the hepatic lobule and blood flow into the liver. Formation and secretion of bile. Enterohepatic cycle, detoxification in liver. Jaundice, liver cirrhosis and fatty liver	B Sc (H) Biochemistry	BCH C-8: Human Physiology
		Unit 9: Structure and role of T cell receptor, and co-receptor, T cell development, generation of receptor diversity, selection and differentiation.	B Sc (H) Biochemistry	BCH C14: Immunology
		Unit 2: Diabetes Mellitus (NIDDM and IDDM). Lipid metabolism - Mobilization of triglycerides, metabolism of glycerol, β-oxidation of saturated, monounsaturated and poly-unsaturated fatty acids, even and odd chain fatty acids. Ketogenesis and significance, Biosynthesis of C-16 palmitic acid.	B Sc (H) Biological Sciences	BS C10: Metabolism and Integration
	Practical	Study of permanent slides of mammalian oesophagus, stomach, ileum, rectum, liver, trachea, lung, kidney, skin Continuous Evaluation	B.Sc. Biological Science (H) II Yr, Sem III	BS C8: Systems Physiology

		Permanent slides of pathogens. Leishmania, Plasmodium falciparum WIDAL test	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-4 MBID
		Separation of photosynthetic pigments by TLC	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-5 Plant Biochemistry
April	**Theory**	**Unit 4**: Sex determination and differentiation. Development of female and male genital tracts. Oogenesis, Spermatogenesis, capacitation and transport of sperm, blood-testis barrier. Fertilization. Early development, Implantation. Placentation and Parturition.	B Sc (H) Biochemistry	BCH C-8: Human Physiology
		Unit 10: General properties of effector T cells, cytotoxic T cells (Tc), natural killer cells; NKT cells and antibody dependent cellular cytotoxicity (ADCC). **Unit 12**: Immunological basis of graft rejection, clinical manifestations, immunosuppressive therapy and privileged sites. Vaccines - active and passive immunization, types of vaccines.	B Sc (H) Biochemistry	BCH C14: Immunology
		Unit 4: Metabolic changes during starve-feed cycle, exercise, diabetes and alcohol abuse.	B Sc (H) Biological Sciences	BS C10: Metabolism and Integration
	Practicals	Mounting of septal and pharyngeal nephridia of earthworm Continuous Evaluation	B.Sc. Biological Science (H) II Yr, Sem III	BS C8: Systems Physiology
		Permanent slides of pathogens. Mycobacterium tuberculosis PCR based diagnosis Dot Blot ELISA	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-4 MBID
		Culture of plants (explants) Continuous Evaluation	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-5 Plant Biochemistry
May	**Theory**	Revision	B Sc (H) Biochemistry	BCH C-8: Human Physiology
		Revision	B Sc (H) Biochemistry	BCH C14: Immunology
		Revision	B Sc (H) Biological Sciences	BS C10: Metabolism and Integration
	Practical	Final Practical Examination	B Sc (H) Biochemistry	BCH C14: Immunology
		Final Practical Examination	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-4 MBID
		Final Practical Examination	B.Sc. Biochemistry (H) III Yr, Sem VI	BCH DSE-5 Plant Biochemistry

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kalyani Krishna **Department: Botany**
Semester : II/IV/VI 2020-21

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to paper and discussion about the paper	B.Sc. (H) Botany Semester VI	Plant metabolism
		Introduction to paper	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
	Practicals	• Chemical separation of photosynthetic pigments	B.Sc. (H) Botany Semester VI	Plant metabolism
		Study of Blotting Techniques (Southern, Northern and Western), Polymerase Chain Reaction, DNA finger printing and DNA sequencing	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
		• To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (P) Life Sciences	Plant Physiology and Metabolism
	Tutorials	----------		
February	**Theory:**	Carbon assimilation, historical background, concept of light, absorption spectra, photosynthetic pigments, their role, antenna molecules, reaction centre, photochemical reactions, ETC, photophosphorylation, PSI, PSII, Qcycle,	B.Sc. (H) Botany Semester VI	Plant metabolism
		Chromatography: principle and applications of paper chromatography	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences

	Practicals:	• To study Hill's reaction • To study the effect of light intensity on rate of photosynthesis • To study the effect of carbon dioxide on rate of photosynthesis • To compare the rate of respiration in different parts of a plant	B.Sc. (H) Botany Semester VI	Plant metabolism
		working and applications of Transmission and Scanning Electron Microscopy, negative and positive staining	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
		• Comparison of the rate of respiration in any two parts of a plant. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To demonstrate hill reaction	B.Sc. (P) Life Sciences	Plant Physiology and Metabolism
	Tutorials:	----------		
March	**Theory:**	CO_2 reduction, photorespiration, C4 pathways, CAM, factors affecting CO_2 reduction Synthesis and catabolism of sucrose and starch ATP synthesis: mechanism, substrate level phosphorylation, chemiosmotic mechanism, ATP synthase	B.Sc. (H) Botany Semester VI	Plant metabolism
		Column chromatography, TLC, GLC, HPLC	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences

	Practicals:	• To study the activity of nitrate reductase in leaves of two different plant sources • To study the activity of urease enxyme and effect of substrate concentration on enzyme activity • To demonstrate the activity of lipase in germinating oilseeds • To demonstrate mobilization of lipids during germination	B.Sc. (H) Botany Semester VI	Plant metabolism
		Methods of sample preparation for electron microscopy (shadow casting, freeze fracture, etching), characterization of nucleic acids	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
		• To study the activity of catalase • To study the effect of pH on catalase To study the effect of enzyme concentration on catalase	B.Sc. (P) Life Sciences	Plant Physiology and Metabolism
	Tutorials:	---------		
	Assignment :	Given to all students for respective papers		
April	**Theory:**	Boyer's conformational model, racker's experiment, Jagendorf's experiment, role of uncouplers Nitrate assimilation, biological nitrogen fixation, physiology and biochemistry	B.Sc. (H) Botany Semester VI	Plant metabolism
		Ion-exchange chromatography, molecular sieve chromatography, Affinity chromatography	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
	Practicals:	• To demonstrate fluorescence by isolated chlorophyll pigments • To demonstrate absorption spectrum of photosynthetic pigments • To demonstrate respiratory quotient	B.Sc. (H) Botany Semester VI	Plant metabolism
		Estimation of proteins by Lowry's method, Gel electrophoresis	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
		• To demonstrate bolting • To demonstrate effect of auxins on rooting To demonstrate suction due to transpiration	B.Sc. (P) Life Sciences	Plant Physiology and Metabolism
	Tutorials:	---------		
	Test	Conducted for all papers		

May	**Theory:**	Ammonia assimilation, reductive amination and transamination	B.Sc. (H) Botany Semester VI	Plant metabolism
		Use of radioisotopes in biological research, auto-radiography, pulse-chase experiment	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences
	Practicals:	• Repetitions of experiments which students feel • Revision and test	B.Sc. (H) Botany Semester VI	Plant metabolism
		• Repetitions of experiments which students feel • Revision and test	B.Sc. (H) Biological Sciences Semester VI	Analytical techniques in Plant Sciences.
		• Repetitions of experiments which students feel Revision and test	B.Sc. (P) Life Sciences	Plant Physiology and Metabolism
	Tutorials:	--------		

Semester Wise Teaching Plan (LOCF)

B. Sc. (Hons.) Botany Iyr.

Paper – Archegoniatae (BHCC4) Core Course

Unit	Topic	Month
1.	Identifying features of Archegoniates. Adaptations to land habit and evolution. APG system of classification of Archegoniates, Alternation of Generations.	April
2.	a) General characteristics of Bryophytes, Morphology, anatomy of gametophyte and sporophyte in Riccia, Marchantia Pellia, Porella, Anthoceros, Sphagnum and Funaria.	May
	b) Comparative evolutionary trends in liverworts, hornworts and mosses. Progressive sterilization of the sporophyte. Ecological and economic importance with special reference to Sphagnum. Economic importance.	June
	c) Latest research in the field of Bryophytes could be cited such as examples of sequencing of whole genome of Marchantia polymorpha to elucidate evolution.	July

Internal Assessment Test and Assignment.

Semester II

Practicals

April

Experiments B.Sc(H) Botany Archegoniatae

1) Marchantia: Morphology of thallus, whole mount of rhizoids & scales, vertical section of thallus through Gemma cup, whole mounts of Gemmae (all temporary ~~mounts~~ slides) V.S. of Antheridiophore, L.S. of sporophyte, V.S. of Archegoniophore (all permanent slides)

2) Riccia — Morphology of thallus (specimen or photograph)

3) Pellia, Porella — Morphology of thallus, (through specimens/photographs/permanent slides) Permanent slides or photographs of W.M thallus — vegetative and V.S. reproductive thallus

4) Anthoceros — Morphology of thallus, dissection of sporophyte (to show stomata, spores, pseudoelaters, columella) (temporary slides), V.S. thallus (permanent slide).

5. Sphagnum — Morphology of plant, W.M. leaf (temporary or permanent slide)

6. Funaria — Morphology, W.M. leaf, rhizoids, Operculum, peristome, annulus, spores (temporary slides).

Permanent slides showing antheridial and archegonial heads, L.S. of the capsule and Protonema.

Practicals Experiments B.Sc(H) Botany Contd. Archegoniate

May 7. Psilotum – study of specimen, t.s. sporangium (P.S.)

8. Selaginella – Morphology; w.m. leaf with ligule t.s. stem (permanent slide) w.m. strobilus, w.m. microsporophyll and megasporophyll (temporary slide) l.s. strobilus (permanent slide)

9. Equisetum – Morphology, t.s. stem internode (permanent slide), l.s. strobilus, t.s. strobilus, w.m. sporangiophore, w.m. spores (wet and dry) temporary slides, t.s. rhizome (permanent slide)

June 10. Pteris – Morphology; t.s. rachis, V.S. sporophyll, w.m. sporangium, w.m. spores (temporary slide) t.s. rhizome, w.m. prothallus with sex organs and young sporophyte (P.S.)

July 11. Cycas: Morphology (coralloid ~~leaf~~ root, bulbil, leaf w.m. microsporophyll, t.s. coralloid root. t.s. rachis, V.S. leaflet, V.S. microsporophyll, w.m. spores (temporary slides) l.s. ovule, t.s root (permanent slides)

12. Pinus – Morphology (long & dwarf shoots, male & female cones, t.s. needle, t.s. stem, l.s/t.s. male cone, w.m. microsporophyll w.m. microspores (temporary slides) l.s. female cone (permanent slide)

13. Gnetum: Morphology (stem, male & female cones), t.s. stem (temporary or permanent slide) V.S. ovule (permanent slide

14. Assignment + Test

Semester – II
Paper – Mycology & Phytopathology (BHCC)
LOCF Syllabus

Unit		Topic
2	April	General account of Chytridiomycetes
3	April	Zygomycota General characteristics; Ecology; Thallus organization; Life cycle with reference to Rhizopus,
7	May	Oomycota General characteristics, Ecology, Life cycle and classification with reference to Phytophthora and Albugo
& June & July		Symbiotic Association Lichen — Occurrence, General Characteristics, Growth forms and range of thallus organization, Economic importance of lichens : Mycorrhiza- Ectomycorrhiza, Endomycorrhiza and their significance.

Internal Assessment : Test & Assignment

Semester Wise Teaching Plan
Sri Venkateswara College

Name of the Faculty: Dr. Sunila Khurana Department: BOTANY

Semester II

B.Sc. Life Science Plant Ecology & Taxonomy

Practicals	Experiments
April	1. Determination of pH and analysis of soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency
	2. Study of morphological adaptations of hydrophytes (Hydrilla, Eichhornia, Vallisneria & Nymphaea) and Xerophytes (Opuntia, Ruscus & ~~Asparagus~~ Aloe)
May	3. Study of Biotic interactions of the following: Stem Parasite (Cuscuta) Root Parasite (Orobanche) Epiphyte (Orchid: Rhynchocystis) Predator (Insectivorous Plant: Nepenthes)
	4. Determination of minimum quadrat size for the study of herbaceous vegetation in the college campus by species area curve method.

Practicals

B.Sc Life Sciences
Batch I & III

Plant Ecology & Taxonomy

June

5. Study of instruments used to measure microclimatic variables : soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter.

6. Quantitative analysis of herbaceous vegetation in the college campus for frequency distribution law.

7. Study of vegetative & floral characters of the families :
   1. Brassicaceae a) Brassica
      b) Iberis
   2. Asteraceae a) Sonchus
      b) Ageratum

July

8. Study of vegetative & floral characters of the following families

3. Solanaceae a) Solanum nigrum
   b) Withania
4. Lamiaceae a) Salvia b) Ocimum
5. Liliaceae a) Allium cepa
   b) Lilium

Tutorials : Assignments & Test (Entire Syllabus).

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE(2020-21 Even)
Name of the Faculty: Dr. Shukla Saluja
Department: Botany **Semester : I/III/V**

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Plant identification, Classification, Nomenclature; Biosystematics.	B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics
		Ecosystems (4 lectures) Structure; Processes; Trophic organisation;	B.Sc. Botany (Sem: IV)	CC-9: Ecology
		Applications of Biotechnology (14 lectures) Pest resistant (Bt-cotton); herbicide resistant plants (RoundUp Ready soybean);	B.Sc. Botany (Sem: VI)	CC-14: Plant Biotechnology
	Practicals	Ex.1: Study of vegetative and floral characters terminology for families description. Ex.2: Study of vegetative and floral characters for family-Brassicaceae (description). Ex.3: Study of vegetative and floral characters for family-Solanaceae(description). Ex.4: Study of vegetative and floral characters for family-Lamiaceae (description). 1.Determination of osmotic potential of plant cell sap by plasmolytic method. 2. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte. 3. To study the effect of the environmental factor light on transpiration by excised twig.	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-I)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism
		Construction of restriction maps, Preparation of LB media and understand the functioning of autoclave, Agrobacterium tumefaciens mediated gene transfer methods and indirect methods of gene transfer, Plasmid isolation	B.Sc. Botany (Sem: VI)	CC-14: Plant Biotechnology
	Tutorials	----------		
FEB	**Theory:**	Field inventory; Functions of Herbarium; Important herbaria and botanical gardens of the world and India; ; Virtual herbarium; E-flora; Documentation: Flora, Monographs, Journals; Keys: Single access and Multi-access	B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics
		Food chains and Food webs; Ecological pyramids.	B.Sc. Botany (Sem: IV)	CC-9: Ecology
		Transgenic crops with improved quality traits (Flavr Savr tomato, Golden rice);	B.Sc. Botany (Sem: VI)	CC-14: Plant Biotechnology

	Practicals:	Ex.5: Study of vegetative and floral characters for family-Asteraceae (description). Ex.6: Study of vegetative and floral characters for family-Euphorbiaceae (description). Ex.7: Study of vegetative and floral characters for family-Liliaceae (description). 4. To Study Hill's reaction. 5. To study the activity of catalase. 6. Comparison of the rate of respiration in any two parts of a plant. 7. To study the effect of pH and enzyme concentration. Understanding Genetically modified crop plants (Bt cotton, Golden rice and Flavr savr tomato), somatic embryogenesis (direct and indirect), artificial seeds and in vitro tissue culture methods	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-I) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	----------		
MAR	**Theory:**	Principles and rules (ICN); Ranks and names; Typification, author citation, valid publication, rejection of names, principle of priority and its limitations; Names of hybrids. : Functional aspects of ecosystem (8 lectures) Principles and models of energy flow; Production and productivity; Ecological efficiencies Improved horticultural varieties (Moondust carnations); Role of transgenics in bioremediation (Superbug);	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics CC-9: Ecology CC-14: Plant Biotechnology

	Practicals:	Ex.8: Study of vegetative and floral characters for family-Myrtaceae(description). Ex.9: Study of vegetative and floral characters for family-Apiaceae(description). 1.To study the effect of light intensity on O2 evolution in photosynthesis. 2.Setup- Demonstration experiments of Bolting. c als: Micropropagartion technique and isolation of protoplast methods, in vitro strerilization methods	B.Sc. Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-I) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	---		
APR	**Theory:**	Major contributions of Theophrastus, Bauhin, Tournefort, Linnaeus, Adanson, de Candolle, Bessey, Hutchinson, Takhtajan and Cronquist Classification systems of Bentham and Hooker (upto series) and Engler and Prantl (upto series); Brief reference of Angiosperm Phylogeny Group (APG III) classification. Biogeochemical cycles; Cycling of Carbon, Nitrogen and Phosphorus. edible vaccines;Industrial enzymes (Aspergillase, Protease, Lipase); Gentically Engineered Products–Human Growth Hormone; Humulin; Biosafety concerns.	B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: IV) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics CC-9: Ecology CC-14: Plant Biotechnology
	Practicals:	Ex.10: Study of vegetative and floral characters for family-Ranunculaceae (description). Ex.11: Study of vegetative and floral characters for family-Poaceae(description). 1.Setup- Demonstration experiments of Suction due to transpiration. 2. Effect of auxins on rooting. Study of embryo and endosperm culture, gel electrophoresis, Mock test and file evaluation	Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-I) B.Sc. Botany (Sem: VI)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism CC-14: Plant Biotechnology
	Tutorials:	---		
	<u>Test</u>			
MAY				

	Practicals:	e Uploading and Practical Exam. Setup- Demonstration experiments 1. Hydroponics (using a photograph). 2. To demonstrate the delay of senescence by cytokinins. 3. To study the phenomenon of seed germination (effect of light	Botany (Sem: IV) B.Sc.(P)-Life Science Sem.IV(B-I&III)	CC-10: Plant Systematics LSCC-1/Plant Physiology & Metabolism

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Amit Vashishtha **Department: Botany**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Nam
JANUARY	**Theory**	1. **Unit 1**: Historical perspective; Experiments that established nucleic acids (DNA & RNA) as the carrier of genetic information: Griffith's,Hershey & Chase, Avery, McLeod & McCarty and Fraenkel Conrat 's experiment .**Unit 2:** DNA Structure: Miescher to Watson and Crick- a historic perspective.DNA structure , salient features of double helix	1. B.Sc. Hons. Botany Semester IV	(BHCC8) Molecular Biology
		2. Introduction to Biological Databases;	2. B.Sc. Hons. Botany Semester VI	Bioinformatics
		3. Unit 1: History of discovery of DNA, features of the double helix, various forms of DNA. Denaturation and reassociation of DNA, hyperchromicity, melting temperature, factors affecting Tm of DNA molecules.Types of RNA and their structure.Definition of a gene, organization of genes in viruses, bacteria and eukaryotes. Complexity of eukaryotic genes and chromosomes, supercoiling of DNA and its importance, linking number,	3. B.Sc. Hons. Biological Sciences Semester IV	(BS C-9) Molecular Biology
	Practicals	• Preparation of LB medium and raising E. coli • Study of experiments establishing nucleic acid as genetic material (Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments)through photographs • DNA isolation from cauliflower heads	1. B.Sc. Hons. Botany Semester IV	(BHCC8) Molecular Biology
		• Nucleic acid databases: • NCBI, • DDBJ • EMBL • Protein databases: • PIR and UniProt	2. B.Sc. Hons. Botany Semester VI	Bioinformatics
		• Isolation of chromosomal DNA • Tto assess the purity by A260/A280 Ratio • Isolation of total RNA from bacteria/yeast	3. B.Sc. Hons. Biological Sciences Semester IV	BS C-9) Molecular Biology

	Tutorials			
FEBRUARY	**Theory:**	1. **Unit 2** Types of DNA: A,B & Z conformations . Genome complexity: Concept of C-value paradox, denaturation and renaturation, Cot curves; Organization of DNA- in Prokaryotes, Viruses & Eukaryotes. Organelle DNA -- mitochondria and chloroplast DNA; Chromatin structure- Nucleosome, Euchromatin, Heterochromatin- Constitutive and Facultative heterochromatin . RNA : types of RNA molecules , structure and function of mRNA, tRNA and rRNA 2. Introduction to Biological Databases; Classification of Biological databases (Primary, secondary, composite and Integrated); Biological Database retrieval system; Introduction to NCBI and tools and databases at NCBI; Data retrieval tool: Entrez and submition tool: Bankit and Sequin 3. **Unit 1:** topoisomerases, inhibitors of topoisomerases and their application in medicine, Nucleosome structure and packaging of DNA into higher order structures. **Unit 2:** General features of DNA replication, the chemistry of DNA synthesis, DNA polymerase, the replication fork, enzymes and proteins in DNA replication, E coli DNA polymerases,	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Practicals:	• Quantification of unknown DNA by diphenylamine reagent. • Study of DNA replication through photographs: Modes of replication - Rolling circle, Theta and semi-discontinuous ; Semiconservative model of replication (Messelson and Stahl's experiment); Telomerase assisted end-replication of linear DNA • Study of structures of : tRNA (2D and 3D); prokaryotic RNA polymerase and eukaryotic RNA polymerase II through photographs • Nucleotide sequence retrieval from nucleotide databases • protein sequence retrieval from protein databases • Retrieval of protein sequence by given nucleotide accession number by protein database. • Determination of DNA concentration by A260nm • Quantitative estimation of DNA by DPA method	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology

	Tutorials:			

	Assignment :			
MARCH	**Theory:**	1. **Unit 4:** Mechanism - initiation, elongation and termination, Kornberg's discovery; Enzymes and other proteins involved in DNA replication; General principles – bidirectional, semiconservative and semi discontinuous replication (Replisome), RNA priming (primase & Primosome); Various modes of DNA replication, including rolling circle, θ (theta) mode of replication, replication of linear ds-DNA. Replication of the 5'end of linear chromosome (end replication problem & Telomerase). 2. Basic local alignment search tool (BLAST) and types of BLAST;Tools and databases at NCBI in Detail; Genbank, Why Sequence alignment?; Homologous sequence: Orthologous & paralogous sequence; Concept of sequence alignment; Gap and Gap Penalty; How can we get the best alignment?; 3. **Unit 2** Stages of replication-initiation, elongation and termination, origin of replication, replication in eukaryotes, end replication problem, telomerase, various modes of 50 replication. Comparison of replication in prokaryotes and eukaryotes. Inhibitors of replication.	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology

Practicals:	• Numericals based on DNA re-association kinetics (melting profiles and Cot curves) • Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozymes and Alternative splicing • Sequence alignment of the given sequences and interpret the results • Construction of Phylogenetic tree using the aligned file using MEGA. • Quantitative estimation of RNA by orcinol method • Ultraviolet absorption spectrum of DNA/RNA	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
Tutorials:				
<u>Test</u>				

APRIL	**Theory:**	1. **Unit 8 :** Basic principles of transcriptional regulation: Positive & negative; Inducible & Repressible; Activators and Repressors ; Prokaryotes: Operon concept & regulation of lactose metabolism (positive and Negative) and tryptophan synthesis (Repression-Derepression and Attenuation) in E.coli; 2. Similarity and distance method for sequence alignment; Pairwise and multiple alignment; CLUSTAL W and Muscle; Global and Local, Scoring Matrices/ Amino acid substitution matrices (PAM and BLOSUM); DOT Metrix Method; 3. Unit VI: Principles of gene regulation, negative and positive regulation, concept of operons, regulatory proteins, activators, repressors, DNA binding domains. Regulation of gene expression in bacteria, lac operon and trp operon, induction of SOS response, synthesis of ribosomal proteins. Overview of regulation of gene expression in eukaryotes, heterochromatin, euchromatin, chromatin remodeling, DNA binding activators and co activators, regulation of galactose metabolism genes in yeast	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Practicals:	• Understanding the mechanism of RNAi by photographs. • Understanding the regulation of lactose (lac) operon (positive & negative regulation) and tryptophan (trp) operon (Repression and De-repression & Attenuation) through photographs. • Mock test • Gene annotation • Mock test • Identification of nucleotide bases by paper chromatography • Mock test	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Tutorials:			

MAY	**Theory:**	1. **Unit 8:** Eukaryotes: Gene silencing: Methylation, RNAi, Imprinting. 2. Construction of phylogenetic tree, dendrograms, methods of construction of phylogenetic trees - maximum parsimony, maximum likelihood and distance methods. 3. ,Riboswitches, RNA interference, siRNA, miRNA.	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Practicals:	Repeat and Doubts Class Repeat and Doubts Class Repeat and Doubts Class	1. B.Sc. Hons. Botany Semester IV 2. B.Sc. Hons. Botany Semester VI 3. B.Sc. Hons. Biological Sciences Semester IV	(BHCC8) Molecular Biology Bioinformatics BS C-9) Molecular Biology
	Tutorials:			

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Aditi Kothari Chhajer **Department:Botany**

Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	• Origin of Cultivated Plants: Concept of centres of origin, their importance with reference to Vavilov's work • Cereals-Wheat -Origin, morphology, uses	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		• Introduction to Intellectual Property: Historical Perspective, Different Types of IP, Importance of protecting IP. • Copyrights Introduction, How to obtain, Differences from Patents.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		• Photosynthesis: Historical contribution of Julius von Sachs, Blackman, Emerson, Engelmann, Hill.Arnon • Photosynthetic pigments (chlorophyll a and b, xanthophyll, carotene);	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals	Familiarization with basic equipment in tissue culture. Study of economically important plants - Black pepper, Clove and Tea through specimens and sections.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Copyright infringement Plagiarism check Introduction to IPR e-diary	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials			
FEBRUARY	**Theory:**	• Legumes-General account with special reference to Gram and soybean. • Micropropagation: Introduction • PCR and Reverse Transcriptase-PCR	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Trade Marks Introduction, How to obtain, Different types of marks — Collective marks, certification marks, service marks, Trade names, etc. Differences from Designs. Geographical Indications Definition, rules for registration, prevention of illegal exploitation, importance to India.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights

		Photosystem I and II, reaction center, antenna molecules; electron transport and mechanism of ATP synthesis	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests.	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Trademark Search Patent search Industrial designs	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials:			
MARCH	**Theory:**	Haploid production through androgenesis and gynogenesis; DNA Fingerprinting; Molecular DNA markers i.e. RAPD, RFLP, SNPs	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Patents Historical Perspective, Basic and associated right, WIPO, PCT system, Traditional Knowledge, Patents and Healthcare — balancing promoting innovation with public health, Software patents and their importance for India Industrial Designs Definition, How to obtain, features, International design registration.	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		C3 pathway; C4 and CAM plants (in brief, no pathways); photorespiration	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Geographical Indicators i)food (Basmati rice, Tirupati laddu, etc.) ii)handlooms(kota saree, banarse,etc.) iii)industry (mysore agarbatti, feni, champagne,etc) iv)Natural resources (Makrana marble, etc)	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials:			

APRIL	**Theory:**	DNA sequencing Hybridoma and monoclonal antibodies, ELISA	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Layout design of integrated circuits Circuit Boards, Integrated Chips, Importance for electronic industry. Trade Secrets Introduction and Historical Perspectives, Scope of Protection, Risks involved and legal aspects of Trade Secret Protection. Different International agreements (a) Word Trade Organization (WTO): (i) General Agreement on Tariffs & Trade (GATT), Trade Related Intellectual Property Rights (TRIPS) agreement	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		Plant growth regulators: Discovery, physiological roles of auxins, gibberellins	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	Study of molecular techniques: PCR,Blotting techniques, AGE and PAGE	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		Biopiracy Industrial Designs	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials:			
MAY	**Theory:**	Blotting techniques: Northern, Southern and Western Blotting, Presentations and Revision of Concepts	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology
		General Agreement on Trade related Services (GM'S) (iii) Madrid Protocol (iv) Berne Convention (v) Budapest Treaty (b) Paris Convention WIPO and TRIPS, IPR and Plant Breeders Rights, IPR and Biodiversity IP Infringement issue and enforcement — Role of Judiciary, Role of law enforcement agencies Police, Customs etc. Economic Value of Intellectual Property , Intangible assets and their valuation, Intellectual Property in the Indian Context Various laws in India:Licencing and tech transfer	B.Sc.(P.) Life Sciences Sem VI	Intellectual Property Rights
		Plant growth regulators: Discovery, physiological roles of cytokinins and ethylene.	B.Sc. (P.) Life Sciences Sem IV	Plant Physiology and Metabolism
	Practicals:	Mock Practical exam and Revision	B.Sc.(P.) Life Sciences Sem VI	Economic Botany and Plant Biotechnology

		e-diary submissions mock practical and revision	B.Sc. m(P.) Life Sciences Sem VI	Intellectual Property Rights
	Tutorials:			

Teaching plan

Name: Dr. Pooja Gokhale Sinha

Department: Botany

General Note: Subject-specific Whats app groups comprising of students of B.Sc. (H) Botany semesters II, IV and VI have been created to share the necessary information and solve doubts of students.

Week	Course	Subject	Topic	Resources used
January	B.Sc. (H) Botany, Sem II	Cell Biology (Practical)	Cell Division	
	B.Sc. (H) Botany Sem IV	Ecology	Community Dynamics Sub topic: Concepts of climax	Power point presentation (created by myself) E-paathshala lecture: https://youtu.be/VQ0PVZqqCDw
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	Role and types of Fermenters	Weblinks from Botanypedia.com 1d4a01_5cdc78227bc04b6ea24b3b0ac54f5c13.pdf
February	B.Sc. (H) Botany, Sem II	Cell Biology (Practical)	Effect of organic solvents and temperature on membrane permeability	Power point presentation
	B.Sc. (H) Botany Sem IV	Ecology	Ecosystem: Sturcture and Function, Introduction	PDF of E-Book Video lecture: https://youtu.be/AACt-K29aqQ
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	Waste water treatment and mechanism to isolate microbes	

Week	Course	Subject	Topic	Resources used
March	B.Sc. (H) Botany, Sem II	Cell Biology (Practical)	Understanding ultrastructure of Cell organelles by studying micrographs	Photographs and ppt
	B.Sc. (H) Botany Sem IV	Ecology	Ecosystem: Energetics	E book
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	Role of microbes in industrial purposes	
April	B.Sc. (H) Botany, Sem II	Cell Biology (Practical)	Effect of organic solvents and temperature on membrane permeability	Ppt
	B.Sc. (H) Botany Sem IV	Ecology	Concept of climax in succession	PDF of E-Book Video lecture: https://youtu.be/AACt-K29aqQ
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	Environmental microbiology: Microbes in Air, soil and water	

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Neeti Mehla **Department: Botany**

Semester: II/IV/VI

Academic Year – 2020-2021

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	• Spices: General account with special reference to clove and black pepper (Botanical name, family, part used, morphology and uses)	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Central Dogma and Genetic Code - Key experiments establishing-The Central Dogma,Genetic code (salient features & experiments that deciphered the correlation between mRNA codon and amino acid).	Bsc. Botany (H) IV Sem	Molecular Biology
		• Importance of water, water potential and its components, pathway of water movement	BSc.Life Sciences IV Sem	Plant Physiology and Metabolism
	Practicals	• Familiarization with basic equipment in tissue culture. Study of economically important plants - Black pepper, Clove and Tea through specimens and sections	BSc. Life Sciences VI Sem	
		• Preparation of LB medium and raising E. coli	Bsc. Botany (H) IV Sem	
		• Study of experiments establishing nucleic acid as genetic material (Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments) through photographs • DNA isolation from cauliflower heads .		
	Tutorials			
FEBRUARY	**Theory:**	• Beverages- Tea (morphology, processing, uses) • Oils and Fats- General description with special reference to groundnut.	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Mechanism of Transcription- Transcription in prokaryotes and eukaryotes;	Bsc. Botany (H) IV Sem	Molecular Biology

		• Understanding the steps in process of transcription: Initiation, Elongation and Termination. • Enzymes and factors involved in transcription. • Ascent of sap, transpiration and its significance • Factors affecting transpiration, root pressure and guttation, • stomatal movements – only ion theory.	BSc.Life Sciences IV Sem	Plant Physiology and Metabolism
	Practicals	• Study of economically important plants: Wheat, Gram, Soybean through specimens, sections and microchemical tests. • Quantification of unknown DNA by diphenylamine reagent. • Study of DNA replication through photographs: Modes of replication - Rolling circle, Theta and semi-discontinuous; Semiconservative model of replication (Messelson and Stahl's experiment); Telomerase assisted end-replication of linear DNA • Study of structures of : tRNA (2D and 3D); prokaryotic RNA polymerase and eukaryotic RNA polymerase II through photographs	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem	Economic Botany and Plant Biotechnology Molecular Biology
	Tutorials:			
MARCH	**Theory:**	• Fibre Yielding Plants • General description with special reference to Cotton (Botanical name, family, part used, morphology and uses) • Brief account of embryo & endosperm culture with their applications. • Split genes-concept of introns and exons, Splicing pathways, group I & group II intron splicing, • Spliceosome and assembly of the spliceosome machinery, • Alternative splicing, Eukaryotic mRNA processing (5' cap, 3' poly A tail) • Ribozymes, RNA Editing • Composition of phloem sap • girdling experiments • Pressure Flow Model	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem BSc.Life Sciences IV Sem	Economic Botany and Plant Biotechnology Molecular Biology Plant Physiology and Metabolism

	Practicals:	• Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Numericals based on DNA re-association kinetics (melting profiles and Cot curves) • Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozymes and Alternative splicing	Bsc. Botany (H) IV Sem	Molecular Biology
	Tutorials:			
	<u>Tests</u>			
APRIL	**Theory:**	• Methods of gene transfer-Agrobacterium mediated genetic transformation. • Bt Cotton and Golden Rice • Direct gene transfer by electroporation	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Translationin prokaryotes and eukaryotes; • Understand the steps in process of translation - Initiation, Elongation and Termination. • Enzymes and factors involved in translation. • Ribosome structure and assembly (in prokaryotes and eukaryotes); • charging of tRNA, aminoacyl tRNA synthetases;	Bsc. Botany (H) IV Sem BSc.Life Sciences IV Sem	Molecular Biology Plant Physiology and Metabolism
		• Pressure Flow Model, • phloem loading and unloading		
	Practicals:	• Study of molecular techniques: PCR,Blotting techniques, AGE and PAGE	BSc. Life Sciences VI Sem	Economic Botany and Plant Biotechnology
		• Understanding the mechanism of RNAi by photographs. • Understanding the regulation of lactose (lac) operon (positive & negative regulation) and tryptophan (trp) operon (Repression and De-repression & Attenuation) through photographs. • Mock test	Bsc. Botany (H) IV Sem	Molecular Biology
	Tutorials:			

MAY	**Theory:**	• Direct gene transfer by Microinjection, and Microprojectile bombardment. • Fidelity of translation; • Inhibitors of protein synthesis; Post-translational modifications of proteins. Revision of all Topics	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem BSc. Life Sciences IV Sem	Economic Botany and Plant Biotechnology Molecular Biology Plant Physiology and Metabolism
	Practicals:	Mock Practical exam and Revision Mock Practical exam and Revision	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem	Economic Botany and Plant Biotechnology Molecular Biology
	Tutorials:			

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Yogendra Kumar Gautam **Department: Botany**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Systematics-an interdisciplinary science Evidence from palynology, cytology, phytochemistry [Alkaloids, Phenolics, Glucosides, terpenes and Semantides] and molecular data (cp.DNA, mt-DNA, nuclear DNA, PCR amplification, sequence data analysis)	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Plant-water relations: Importance of water, water potential and its components, pathway of water movement, ascent of sap,	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
		Eubacteria: Reproduction-vegetative, asexual and recombination (conjugation, transformation and transduction), Bacterial diseases.	B.Sc.(H)-Botany Sem.I	BHCC-1/Microbiology & Phycology
	Practicals	Ex.1: Study of vegetative and floral characters terminology for family description. Ex.2: Study of vegetative and floral characters for family-Brassicaceae (description). Ex.3: Study of vegetative and floral characters for family-Solanaceae(description). Ex.4: Study of vegetative and floral characters for family-Lamiaceae (description).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		1.Determination of osmotic potential of plant cell sap by plasmolytic method. 2. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte. 3. To study the effect of the environmental factor light on transpiration by excised twig.	B.Sc.(P)-Life Science Sem.IV(B-I&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials			
FEBRUARY	**Theory:**	Taxonomic hierarchy, Concept of taxa (family, genus, species); Categories and taxonomic hierarchy;	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Transpiration and its significance, factors affecting transpiration, root pressure and guttation, stomatal movements only ion theory.	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
		Viruses: Discovery, physiochemical and biological characteristics;classification (Baltimore)General structure with special reference to viroids and prions.	B.Sc.(H)-Botany Sem.I	BHCC-1/Microbiology & Phycology

	Practicals:	Ex.5: Study of vegetative and floral characters for family-Asteraceae (description). Ex.6: Study of vegetative and floral characters for family-Euphorbiaceae (description). Ex.7: Study of vegetative and floral characters for family-Liliaceae (description).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		4. To Study Hill's reaction. 5. To study the activity of catalase. 6. Comparison of the rate of respiration in any two parts of a plant. 7. To study the effect of pH and enzyme concentration.	B.Sc.(P)-Life Science Sem.IV(B-I&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			
	Assignment :	Entire syllabus distributed into all students.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Entire syllabus distributed into all students.	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
MARCH	**Theory:**	Numerical taxonomy: Introduction, Principles, methodology of phenetic approach, (Characters; Variations; OTUs, character weighing and coding; cluster analysis); Phenograms.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Mineral nutrition:Essential elements, macro- and micronutrients, criteria of essentiality of elements, methods of studying mineral requirement (Hydroponics, Aeroponics), role of essential elements, transport of ions across membrane, active and passive transport, carriers, channels and pumps.	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
		General account of replication, DNA virus (T-phage), lytic and lysogenic cycle; RNA virus (TMV). Viral diseases.	B.Sc.(H)-Botany Sem.I	BHCC-1/Microbiology & Phycology
	Practicals:	Ex.8: Study of vegetative and floral characters for family-Myrtaceae(description). Ex.9: Study of vegetative and floral characters for family-Apiaceae(description).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		1.To study the effect of light intensity on O2 evolution in photosynthesis. 2.Setup- Demonstration experiments of Bolting.	B.Sc.(P)-Life Science Sem.IV(B-I&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			
	Test		B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
			B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism

APRIL	**Theory:**	Phylogeny of Angiosperms: Cladistics: Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, Paraphyly, polyphyly and clades).	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Translocation in phloem:Composition of phloem sap, girdling experiments, Pressure Flow Model, phloem loading and unloading.	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
	Practicals:	Ex.10: Study of vegetative and floral characters for family-Ranunculaceae (description). Ex.11: Study of vegetative and floral characters for family-Poaceae(description). *Practical Test(23/04/21)	B.Sc.(H)-Botany Sem:.IV	BHCC-10/Plant Systematics
		1.Setup- Demonstration experiments of Suction due to transpiration. 2. Effect of auxins on rooting.	B.Sc.(P)-Life Science Sem.IV(B-I&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			

MAY	**Theory:**	Methodology of Cladistics, Methods of illustrating evolutionary relationships (phylogenetic tree, cladogram) Origin and evolution of angiosperms.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Plant growth regulators:Discovery, physiological roles of auxins, gibberellins, cytokinins and ethylene.	B.Sc.(P)-Life Science Sem.IV(Sec.-B)	LSCC-1/Plant Physiology & Metabolism
	Practicals:	File Uploading and Practical Exam.	B.Sc.(H)-Botany Sem.IV	BHCC-10/Plant Systematics
		Setup- Demonstration experiments 1. Hydroponics (using a photograph). 2. To demonstrate the delay of senescence by cytokinins. 3. To study the phenomenon of seed germination (effect of light and darkness)	B.Sc.(P)-Life Science Sem.IV(B-I&III)	LSCC-1/Plant Physiology & Metabolism
	Tutorials:			

SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Tabassum Afshan **Department: Botany**

Semester : IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	1.Scope and importance of medicinal plants in the traditional system of medicine and modern medicine. Importance of preventive and holistic healing in the Indian traditional systems of medicine. Ayurveda : History ,origin, fundamental doctrine and concepts of Panchmahabhutas , Saptadhatus and Tridoshas in relation to health and disease. 2. Therapeutic and pharmaceutical uses of important plants used in Ayurveda system of medicine 3. Concept of Rasayana drugs 4.Photosynthesis : Historical contribution of Julius Von Sachs, Blackman, Emerson, Engelmann, Hill, Arnon, Photosynthetic pigments (chlorophyll a and b, xanthophyll, carotene),Photosystem I and II, reaction centre, Electron transport and mechanism of ATP synthesis	B.Sc. Botany (Hons) B.Sc. Life Science B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) LSCC1/Plant Physiology and Metabolism
	Practicals	1.Identification and medicinal value of locally available medicinal plants in the field. 2.Study of organoleptic, microscopic and macroscopic parameters of any two plant drugs 3.Sections and microscopic evaluations 4. Study of economically important plants : Wheat, Black pepper, Clove and Tea	B.Sc. Life Science B.Sc. Botany (Hons) B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) DSE / Economic Botany and Biotechnology
	Tutorials			

FEBRUARY	**Theory:**	1.Siddha : Origin , concepts, therapeutic and pharmaceutical uses of important plants used in Siddha system of medicine. 3.Unani : History, concept of Umoor-e-Tabiyat (Fundamentals of Physique), therapeutic and pharmaceutical uses of plants used in Unani system of medicine 4. Nutraceuticals and polyherbal formulations 5. C3 pathway, C4 and CAM plants (in brief), photorespiration	B.Sc. Botany (Hons) B.Sc. Life Science B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) LSCC1/Plant Physiology and Metabolism
	Practicals:	1.Isolation of bioactive compounds in the lab and phytochemical analysis of the crude extract of various parts of medicinal plants 2. Study of ingredients and medicinal uses of common polyherbal formulations used in the traditional system of medicine 3. Microchemical tests- Wheat, gram, Soyabean, Cotton and Groundnut (Specimens for all) 4. Familiarisation with basic equipments in tissue culture (Laminar Air flow and Autoclave)	B.Sc. Life Science B.Sc. Botany (Hons) B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC DSE / Economic Botany and Biotechnology
	Tutorials:			

	Assignment :	Entire syllabus		
MARCH	**Theory:**	1.Plants used for the treatment of hepatic disorders, cardiac diseases, infertility, diabetes, blood pressure, cancer and skin diseases 2. Role of AYUSH, NMPB, and AIIA in the promotion of medicinal plants 3. Adulteration of herbal drugs, evaluation and standardization of crude drugs. 4. Fundamentals of pharmacognosy 5.Nitrgen metabolism: Biological nitrogen fixation, nodulation in detail, nitrate assimilation	B.Sc. Botany (Hons) B.Sc. Life Science B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) LSCC1/Plant Physiology and Metabolism
	Practicals:	1.E-presentations : traditional system of medicine, contribution of medicinal plants to alternative and modern medicine, conservation strategies of medicinal plants 2.Study through photographs : Anther culture, somatic embryogenesis, endosperm culture 3.Study of molecular techniques : PCR	B.Sc. Life Science B.Sc. Botany(Hons) B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) DSE / Economic Botany and Biotechnology
	Tutorials:			
	Test	Entire syllabus		

APRIL	**Theory:**	1.Organoleptic, microscopic and phytochemical evaluation of crude drugs 2.Conservation of Endangered and Endemic medicinal plants, Red Data List Criteria, In situ conservation: Biosphere reserves, National parks, Sacred groves, Ex situ conservation : Botanic gardens, National gene banks, Plant cell, Tissue and Organ culture, Cryopreservation Role of NBPGR, CIMAP, JNTBGR and RRL 3. General; aspects of cultivation and propagation of medicinal plants, WHO Guidelines of Good Agricultural and Cultivation Practices (GAPC) 4. Ammonium assimilation, dinitrogenase , NR, NIR, transamination	B.Sc. Botany (Hons) B.Sc. Life Science B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) LSCC1/Plant Physiology and Metabolism
	Practicals:	1.E- presentations – Nutraceuticals, Rasayana drugs, Medicinal plants and non-communicable diseases, cultivation , marketing and utilisation of medicinal plants, 2.Blotting techniques- Southern, Northern and Western , AGE and PAGE(through photographs)	B.Sc. Life Science B.Sc. Botany (Hons) B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC) DSE / Economic Botany and Biotechnology
	Tutorials:			

MAY	**Theory:**	1.Objectives of a nursery, classification and important components of nursery, Greenhouse technology, Propagation through cuttings, layering, grafting and budding.	B.Sc. Botany (Hons) B.Sc. Life Science	LSSE2 / Medicinal Botany (SEC) LSSE2 / Medicinal Botany (SEC)
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Pamil Tayal **Department: Botany**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Tissue culture and its application, importance of haploids, and triploids, somatic embryogenesis, totipotency	B.Sc. (H) Botany	**Plant Biotechnology**
		Principle of Microscopy (light Microscopy), Numerical Aperture	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Introduction to chromatography, its principle and applications of paper chromatography and thin layer chromatography	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Practicals	Construction of restriction maps, Preparation of LB media and understand the functioning of autoclave, Agrobacterium tumefaciens mediated gene transfer methods and indirect methods of gene transfer, Plasmid isolation	B.Sc. (H) Botany	**Plant Biotechnology**
		Study of Blotting Techniques (Southern, Northern and Western), Polymerase Chain Reaction, DNA finger printing and DNA sequencing	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Verification of Beers law, estimation of proteins by lowry's method	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Tutorials			

FEBRUARY	**Theory:**	Prokaryotic and eukaryotic vectors, cDNA and genomic DNA library construction, direct and indirect methods of gene transfer	B.Sc. (H) Botany	**Plant Biotechnology**
		working and applications of Transmission and Scanning Electron Microscopy, negative and positive staining	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Types of chromatography (ion exchange, affinity and gel filteration)	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Practicals:	Understanding Genetically modified crop plants (Bt cotton, Golden rice and Flavr savr tomato), somatic embryogenesis (direct and indirect), artificial seeds and in vitro tissue culture methods	B.Sc. (H) Botany	**Plant Biotechnology**
		Study of ELISA, To separate nitrogenous bases by paper chromatography, to separate sugars by TLC, AGE and PAGE	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Separation of amino acids by TLS, Biuret method for protein estimation, separation of sugars and bases by paper chromatography	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Tutorials:			

	Assignment:	Assignment related to theory was given to every student		
MARCH	**Theory:**	Colony hybridization, Blue white screening method, types of marker genes (reporter gene, selectable markers, scorable markers) and conservation of germplasm strategies	B.Sc. (H) Botany	**Plant Biotechnology**
		Methods of sample preparation for electron microscopy (shadow casting, freeze fracture, etching), characterization of nucleic acids	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Electrophoresis (AGE and PAGE), types and its applications, characterization of proteins and nucleic acids	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Practicals:	Micropropagartion technique and isolation of protoplast methods, in vitro strerilization methods	B.Sc. (H) Botany	**Plant Biotechnology**
		Isolation of chloroplast by differential centrifugation, study of different microscopic techniques, FISH and fluorescence microscopy	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Study of different chromatographic techniques (GFC and Ion exchange). To perform Agarose gel electrophoresis	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Tutorials:			
	Test	Internal theory test was conducted		

APRIL	**Theory :**	In vitro androgenesis, embryogenesis and applications of tissue culture, expression vectors	B.Sc. (H) Botany	**Plant Biotechnology**
		X-Ray Crystallography and diffraction patterns, Flow cytometry	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		Molecular weight determination of proteins by chromatography, isoelectric focusing, principle of centrifugation and sedimentation	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Practicals:	Study of embryo and endosperm culture, gel electrophoresis, Mock test and file evaluation	B.Sc. (H) Botany	**Plant Biotechnology**
		Estimation of proteins by Lowry's method, Gel electrophoresis and Mock test and file evaluation	B.Sc. (H) Biological Science	**Analytical Techniques in Plant Sciences**
		To understand PAGE and different separating techniques, isolation of mitochondria and assay of its marker enzyme SDH in different tissues	B.Sc. (H) Biological Science	**Biochemical Techniques**
	Practicals Test	Practicals test was conducted and evaluated as per the date sheet		

MAY	**Theory:**			
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Yadav **Department: Botany**
Semester : II/IV/VI 2020-21

Month		Topics	Course	Paper Code/Name
January	**Theory**	Introduction to paper and discussion about the paper	B.Sc. (H) Botany Semester VI	Plant metabolism
		Introduction to paper Unit 6: Structure and properties of enzymes	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Practicals	• Chemical separation of photosynthetic pigments • To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (H) Botany Semester VI B.Sc. (P) Life Sciences Semester IV	Plant metabolism Plant physiology and metabolism
	Tutorials	----------		
February	**Theory:**	Unit-1 Concept of metabolism: anabolic and catabolic pathways, regulation, regulatory enzymes Unit-4 carbon oxidation: glycolysis, regulation, fermentation, OPPP, PDH, NADH shuttle, Kreb's cycle	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit 6: Mechanism of enzyme catalysis and inhibition Unit 7: Biological nitrogen fixation, nitrate and ammonium assimilation Unit8: Physiological roles of auxins, gibberellins	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism

	Practicals:	• To study Hill's reaction • To study the effect of light intensity on rate of photosynthesis • To study the effect of carbon dioxide on rate of photosynthesis • To compare the rate of respiration in different parts of a plant	B.Sc. (H) Botany Semester VI	Plant metabolism
		• Comparison of the rate of respiration in any two parts of a plant. • To study the effect of two environmental factors (light and wind) on transpiration by excised twig • To demonstrate hill reaction	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Tutorials:	----------		
March	**Theory:**	Unit-4 carbon oxidation: Mitochondrial ETC, oxidative phosphorylation, CN resistant respiration, factors	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit 8: Physiological roles of cytokinins, ABA, ethylene Unit 9: Photoperiodism, phytochrome, red and far red responses on photomorphogenesis, vernalization Unit 1: Importance of water, water potential and its components, Transpiration, Root pressure, Guttation	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism

	Practicals:	• To study the activity of nitrate reductase in leaves of two different plant sources • To study the activity of urease enxyme and effect of substrate concentration on enzyme activity • To demonstrate the activity of lipase in germinating oilseeds • To demonstrate mobilization of lipids during germination	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To study the activity of catalase • To study the effect of pH on catalase • To study the effect of enzyme concentration on catalase	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Tutorials:	---		
	Assignment :	Given to all students for respective papers		
April	**Theory:**	Unit-6 Lipid metabolism: synthesis and breakdown, beta-oxidation, glyoxylate cycle, gluconeogenesis, alpha-oxidation	B.Sc. (H) Botany Semester VI	Plant metabolism
		Unit 2: Essential elements, macro and micronutrients, criteria of essentiality of elements, role of essential elements Unit 3: Composition of phloem sap, girdling experiment, pressure flow model, phloem loading and unloading Unit 5: Glycolysis, anaerobic respiration	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Practicals:	• To demonstrate fluorescence by isolated chlorophyll pigments • To demonstrate absorption spectrum of photosynthetic pigments • To demonstrate respiratory quotient	B.Sc. (H) Botany Semester VI	Plant metabolism
		• To demonstrate bolting • To demonstrate effect of auxins on rooting • To demonstrate suction due to transpiration	B.Sc. (P) Life Sciences Semester IV	Plant physiology and metabolism
	Tutorials:	---		
	Test	Conducted for all papers		

May	**Theory:**	Unit-4 Mechanisms of signal transduction: general account, calcium, phospholipids, calcium, cGMP and NO as second messengers Unit 5: TCA cycle, oxidative phosphorylation Revision and test	B.Sc. (H) Botany Semester VI B.Sc. (P) Life Sciences Semester IV	Plant metabolism Plant physiology and metabolism
	Practicals:	• Repetitions of experiments which students feel • Revision and test • Repetitions of experiments which students feel • Revision and test	B.Sc. (H) Botany Semester VI B.Sc. (P) Life Sciences Semester IV	Plant metabolism Plant physiology and metabolism
	Tutorials:	--------		

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SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Kavita Meena **Department: Botany**

Semester: II

Month		Topics	Course	Paper
APRIL	**Theory**	UNIT 4: GYMNOSPERMS- General characteristics. Classification. Morphology, anatomy and reproduction in Cycas. UNIT 3: Plant communities Characters. Ecotone and edge effect	B.Sc. Honors. Semester II B.Sc. Life Sciences-sec -B Semester II	BHCC4 Archegoniate LSCC3 Plant Ecology and Taxonomy
	Practicals	• Riccia- Morphology of thallus. • Marchantia- Morphology of thallus, WM of rhizoids and scales, VS of thallus through Gemma cup, WM of gemmae, VS of antheridiophore, archegoniophore, LS of sporophyte. • Pellia and Porella- morphology of thallus, WM of thallus-vegetative and VS reproductive thallus. • Anthoceros- morphology of thallus, dissection of sporophyte, VS of thallus. • Sphagnum- morphology of plant, WM of leaf. • Funaria - morphology, WM of leaf, rhizoids, operculum, peristome, annulus, spores.	B.Sc. Honors. Semester II	BHCC4 Archegoniate
	Tutorials			
MAY	**Theory:**	UNIT 4: Morphology, anatomy and reproduction in Pinus. UNIT 3: Succession: processes and type (autogenic, allogenic, autotrophic, heterotrophic, primary and secondary)	B.Sc. Honors. Semester II B.Sc. Life Sciences-sec -B Semester II	BHCC4 Archegoniate LSCC3 Plant Ecology and Taxonomy

	Practicals:	• Psilotum- study of specimen, TS of synangium. • Selaginella -morphology, whole mount of leaf with ligule, transverse section of stem, whole mount of strobilus, whole mount of microsporophyll, longitudinal section of strobilus.	B.Sc. Honors. Semester II	BHCC4 Archegoniate
	Tutorials:			

	Assignment :	1. Entire Syllabus 2. Entire practical syllabus	B.Sc. Honors. Semester II	Archegoniate Archegoniate
JUNE	**Theory:**	UNIT 4: Morphology, anatomy and reproduction of Gnetum. Economic Importance of gymnosperms. UNIT 4: Ecosystem Structure, energy flow trophic organization, food chain and food web.	B.Sc. Honors. Semester II B.Sc. Life Sciences- sec -B Semester II	BHCC4 Archegoniate LSCC3 Plant Ecology and Taxonomy
	Practicals:	• Equisetum – morphology, transverse section of internode, longitudinal section of strobilus, transverse section of strobilus, whole mount of sporangiophore, whole mount of spores, transverse section of rhizome • Pteris- morphology, transverse section of rachis, vertical section of sporophyll, whole mount of sporangium, whole mount of spores, transverse section of rhizome, whole mount of prothallus with sex organs and young sporophyte	B.Sc. Honors. Semester II	BHCC4 Archegoniate
	Tutorials:			
	Test			
JULY	**Theory:**	UNIT 4: Concept of double fertilization taking example of Gnetum gnemon and Ephedra. Similarity between Cycas and Ginkgo. Comparison of Cycadales and Ferns. Comparison of angiosperms and Gnetum Unit 4: Ecological Pyramid, production and productivity, biogeochemical cycling.	B.Sc. Honors. Semester II B.Sc. Life Sciences- sec -B Semester II	BHCC4 Archegoniate LSCC3 Plant Ecology and Taxonomy

	Practicals:	• Cycas- morphology, whole mount of microsporophyll, transverse section of coralloid root, transverse section of rachis, vertical section of leaflet, vertical section of microsporophyll, whole mount of spores, longitudinal section of ovule, transverse section of root. • Pinus – morphology long and dwarf shoots, male and female cones, transverse section of needle, transverse section of stem, longitudinal/ TS of male cone, whole mount of microsporophyll, whole mount of microspores, longitudinal section of female cone. • Gnetum – morphology, TS of stem, vertical section of ovule.	B.Sc. Honors. Semester II	BHCC4 Archegoniate
	Tutorials:			

AUGUST	**Theory:**			
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN (2020-21)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Upasana Sharma **Department: Botany**

Semester: II, IV, VI

APRIL	**Theory:**	Ecological factors: Soil (Origin, formation, composition, soil profile). Water: states of water in the environment, precipitation types, light as an ecological factor	B.Sc. Life Sciences Sem II Sec-A	Plant Ecology and Taxonomy
		Ecological factors: Soil (Origin, formation, composition, soil profile). Water: States of water in the environment, precipitation types.	B.Sc. Life Sciences Sem II Sec-B	Plant Ecology and Taxonomy
		Components of Biodiversity, Biodiversity crisis and biodiversity loss, Importance of biodiversity in daily life, Biodiversity vis-a-cis climate change. Types of ecosystems, India as mega biodiversity nation, hot spots, endemism.	B.Sc. Biological Sciences Sem II	Biodiversity
		Measures of Dispersion: Range, mean deviation, variation, standard deviation; chi square test for goodness of fit.	B.Sc. Biological Sciences, Sem VI	Analytical Techniques in Plant Sciences
		Isoelectric focusing of proteins	B.Sc. Biological Sciences Sem IV	Biochemical Techniques
	Practicals:	1. Determination of pH and analysis of soil samples for carbonates, Chlorides, nitrates, sulphates, organic matter and base deficiency. 2. Study of morphological adaptations of hydrophytes (*Hydrilla, Eichhornia, Vallisneria, Nymphaea*) and xerophytes (*Opuntia, Ruscus, Asparagus, Aloe*)	B.Sc. Life Sciences Sem II Batch III	Plant Ecology and Taxonomy

		1. Study through photographs food crops a) Wheat, b) Rice 2. Study of vegetative and reproductive structures of the following genera: *Chlamydomonas* (electron micrograph), *Oedogonium, Vaucheria, Polysiphonia, Fucus*	B.Sc. Biological Sciences Sem II	Biodiversity
		Blotting techniques- Southern, Northern and Western, AGE and PAGE (through photographs)	B.Sc. Life Sciences Sem VI	Economic Botany and Biotechnology
	Tutorials:	Test Entire syllabus Test	B.Sc. Biological Sciences, Sem VI B.Sc. Life Sciences Sem VI	Analytical Techniques in Plant Sciences, Economic Botany and Biotechnology
May	**Theory**	Temperature as an ecological factor, variation optimal and limiting factors; Shelford law of tolerance. Plant Communities, Characters, Ecological niche, Ecads, ecotypes, Ecotone, edge effect	B.Sc. Life Sciences Sem II, Sec A	Plant Ecology and Taxonomy
		Light and Temperature as an ecological factor, variation optimal and limiting factors; Shelford law of tolerance.	B.Sc. Life Sciences Sem II Sec B	Plant Ecology and Taxonomy
		Study of general characteristics of cryptogams (*Oedogonium, Polysiphonia, Rhizopus, Albugo, Anthoceros, Funaria, Selaginella*)	B.Sc. Biological Sciences Sem II	Biodiversity

	Practicals	1. Study of Biotic interactions of the following: Stem parasite (*Cuscuta*), Root parasite (*Orobanche*), Epiphytes (*Rhyncocystis*), Predation (Insectivorus plant: *Nepenthes*). 2. Determination of minimum quadrat size for the study of herbaceous vegetation in the college campus by species area curve method	B.Sc. Life Sciences Sem II, Batch III	Plant Ecology and Taxonomy
		Study of vegetative and reproductive structures of the following genera: *Rhizopus, Penicillium, Albugo, Riccia, Anthoceros, Funaria*	B.Sc. Biological Sciences Sem II	Biodiversity
	Tutorials			
June	**Theory:**	Ecological Succession; Processes and types (autogenic, allogenic, autotrophic, heterotrophic, primary and secondary). Ecosystem; Energy flow and trophic organization; Food chains and food webs, Ecological Pyramids. Production and productivity	B.Sc. Life Sciences Sem II Sec A	Plant Ecology and Taxonomy
		Phytogeography: Continental drift theory, Earth's major tectonic plates, Phytochoria, Principle biogeographic zones, Botanical provinces of India, Vicariance, Center of Origin (Vavilov) and Endemism	B.Sc. Life Sciences Sem II Sec B	Plant Ecology and Taxonomy
		Study of general characteristics of phanerogams (*Pinus*), Angiosperm systematics: Outline of Bentham and Hooker classification, centres of origin of cultivated plants	B.Sc Biological Sciences Sem II	Biodiversity

	Practicals:	Study of instruments used to measure microclimatic variables: soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter. Quantitative analysis of herbaceous vegetation in the college campus for frequency distribution law. Study of vegetative and floral characters of the following families: Brassicaceae- Brassica and Iberis, Asteraceae- Sonchus and Ageratum	B.Sc. Life Sciences Sem II, Batch III	
		Study of vegetative and reproductive structures of the following genera: *Psilotum, Selaginella, Pteris, Cycas, Pinus,* Lichens. Study of the characteristic features of one member from each plant family: Malvaceae (*Hibiscus*), Brassicaceae (*Iberis*), Asteraceae (*Sonchus*)	B.Sc Biological Sciences Sem II	Biodiversity
	Tutorials:			
	<u>Assignment :</u> **<u>Test</u>**	1.Assignment (fungi and Lichens) 2.Assignment (Phytoremediation, National Parks and Wildlife Sanctuaries)	B.Sc. Biological Sciences Sem II B.Sc. Life Sciences Sem II sec A	Biodiversity Plant Ecology and Taxonomy

July	**Theory:**	Phytogeography: Continental drift theory, Earth's major tectonic plates, Phytochoria, Principle biogeographic zones, Botanical provinces of India, Vicariance, Center of Origin (Vavilov) and Endemism. Classification: Types of classification-artificial, natural and phylogenetic. Bentham and Hooker system of classification, Engler and Prantl Classification system	B.Sc. Life Sciences Sem II Sec A	Plant Ecology and Taxonomy
		Classification: Types of classification-artificial, natural and phylogenetic. Bentham and Hooker system of classification, Engler and Prantl Classification system	B.Sc. Life Sciences Sem II Sec B	Plant Ecology and Taxonomy
		Natural resources from plants: beverages, fibres. Wild relatives of cultivated plants; domesticated diversity-its advantages and disadvantages, Green revolution, origin of *Triticum aestivum* and *Orzae sativa* through domestication, spice diversity, forest diversity-types of forests, Agroforestry. Phytoremediation: Plants as indicators and remediators of air, water and soil pollution	B.Sc Biological Sciences Sem II	Biodiversity
	Practicals:	Study of vegetative and floral characters of the following families: Solanaceae, Liliaceae, Liliaceae	B.Sc. Life Sciences Sem II	

		Study of the characteristic features of one member from each plant family: Euphorbiaceae (*Euphorbia hirta*), Liliaceae (*Lilium*). Study through photographs: Fibres (Cotton and Jute), Timber (Teak, Shisham) and Oils (Mustard and Soyabean)	B.Sc. Biological Sciences Sem II	Biodiversity
	Tutorials:			
	<u>Assign ment</u> **<u>Test</u>**	1. Entire syllabus 2. Entire syllabus 3. Entire Practical syllabus 4. Entire syllabus	B.Sc. Life Science Sem II, Sec-A B.Sc. Life Science Sem II, Sec-B B.Sc. Life Sciences Sem II, Batch-III B.Sc. Life Science Sem II, Sec-B	Plant Ecology and Taxonomy Plant Ecology and Taxonomy Plant Ecology and Taxonomy Plant Ecology and Taxonomy

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sachin Kumar **Department: Botany**

Semester : Even (II/IV/VI, April-July, 2021)

Month		Topics	Course	Paper Code/Name
APRIL	**Theory:**	Unit 6: Myxomycota (Allied Fungi)- General characteristics; Status of Slime molds, Classification. Occurrence; Types of plasmodia; Types of fruiting bodies.	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
		Unit 3: Pteridophytes- General characteristics. Early land plants (*Cooksonia* and *Rhynia*). Classification, morphology, anatomy and reproduction of *Psilotum*.	B.Sc(H) Botany Sem-II	BHCC4/Archegoniatae
		Unit 6: Introduction to plant taxonomy- Identification, Classification, Nomenclature. Unit 7: Identification- Functions of Herbarium, important herbaria and botanical gardens of the world and India. Documentation: Flora, Keys: single access and multi-access.	B.Sc(P) Life Sciences Sem-II Section A and B	LSCC3/Plant Ecology and Taxonomy
		Unit 5: Molecular Phylogeny- Software of Phylogenetic Analyses.	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
	Practicals:	1. Determination of pH and analysis of soil samples for carbonates, Chlorides, nitrates, sulphates, organic matter and base deficiency. 2. Study of morphological adaptations of hydrophytes (*Hydrilla, Eichhornia, Vallisneria, Nymphaea*) and xerophytes (*Opuntia, Ruscus, Asparagus, Aloe*)	B.Sc(P) Life Sciences Sem-II Batch-I	LSCC3/Plant Ecology and Taxonomy

		1. Introduction to the world of fungi (Unicellular, coenocytic/septate mycelium, ascocarps & basidiocarps). 2. *Rhizopus*: study of asexual stage from temporary mounts and sexual structures through photographs. 3. *Aspergillus* and *Penicillium*: study of asexual stage from temporary mounts. Study of Sexual stage from photographs.	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
		•Identification of nucleotide bases by paper chromatography •Mock test	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
	Tutorials:			
MAY	**Theory:**	Unit 4: Ascomycota- General characteristics; Ecology; Life cycle.	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
		Unit 3: Pteridophytes- Classification, morphology, anatomy and reproduction of *Selaginella*.	B.Sc(H) Botany Sem-II	BHCC4/Archegoniatae
		Unit 8: Taxonomic evidences from palynology.	B.Sc(P) Life Sciences Sem-II Section A and B	LSCC3/Plant Ecology and Taxonomy
		Unit 5: Molecular Phylogeny- Molecular Phylogenetic Prediction	B.Sc(H) Botany Sem-VI	BHDS4/Bioinformatics
	Practicals:	1. Study of Biotic interactions of the following: Stem parasite (*Cuscuta*), Root parasite (*Orobanche*), Epiphytes (*Rhyncocystis*), Predation (Insectivorus plant: *Nepenthes*). 2. Determination of minimum quadrat size for the study of herbaceous vegetation in the college campus by species area curve method.	B.Sc(P) Life Sciences Sem-II Batch-I	LSCC3/Plant Ecology and Taxonomy
		1. *Peziza*: sectioning through ascocarp. 2. *Alternaria*: Study of vegetative and asexual stages through photographs. 3. *Puccinia*: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; sections of spores on wheat and permanent slides of both the hosts (through photographs).	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology

		Repeat and Doubts Class	B.Sc(H) Biological Science Sem-IV	BS C-9/Molecular Biology
	Tutorials:			
JUNE	**Theory:**	Unit 4: Ascomycota- Life cycle and classification with reference to *Saccharomyces*, *Penicillium*, *Alternaria* and *Neurospora* and *Peziza*.	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
		Unit 3: Pteridophytes- Classification, morphology, anatomy and reproduction of *Equisetum* and *Pteris.* Apogamy, and apospory. Heterospory and seed habit.	B.Sc(H) Botany Sem-II	BHCC4/Archegoniatae
		Unit 8: Taxonomic evidences from cytology, phytochemistry and molecular data. Unit 9: Taxonomic hierarchy-Ranks, categories and taxonomic groups	B.Sc(P) Life Sciences Sem-II Section A and B	LSCC3/Plant Ecology and Taxonomy
	Practicals:	1. Study of instruments used to measure microclimatic variables: soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter. 2. Quantitative analysis of herbaceous vegetation in the college campus for frequency distribution law. 3. Study of vegetative and floral characters of the following families: Brassicaceae-*Brassica* and *Iberis*, Asteraceae- *Sonchus* and *Ageratum*	B.Sc(P) Life Sciences Sem-II Batch-I	LSCC3/Plant Ecology and Taxonomy
		1. *Agaricus*: Specimens of button stage and full grown mushroom; sectioning of gills of Agaricus, fairy rings and bioluminescent mushrooms to be shown (photographs). 2. Study of phaneroplasmodium from photograph. Study of Stemonitis sporangia (photographs). 3. *Albugo*: Study of symptoms of plants infected with *Albugo*; asexual phase study through section and sexual structures through photographs.	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
	Tutorials:			

JULY	**Theory:**	Unit 5: Basidiomycota- General characteristics; Ecology. Life cycle and Classification with reference to black stem rust on wheat *Puccinia* (Physiological Specialization),	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
		Unit 3: Pteridophytes- Telome theory. Ecological and economic importance. Recent phylogenetic classification.	B.Sc(H) Botany Sem-II	BHCC4/Archegoniatae
		Unit 12: Biometrics, numerical taxonomy and cladistics- Characters; variations; OTUs, character weighting and coding; cluster analysis; phenograms, cladograms (definitions and differences).	B.Sc(P) Life Sciences Sem-II Section A and B	LSCC3/Plant Ecology and Taxonomy
	Practicals:	Study of vegetative and floral characters of the following families: Solanaceae, Lamiaceae and Liliaceae	B.Sc(P) Life Sciences Sem-II Batch-I	LSCC3/Plant Ecology and Taxonomy
		1. Lichens: Study of growth forms of lichens (crustose, foliose and fruticose) on different substrates. 2. Study of thallus and reproductive structures (soredia and apothecium) through permanent slides. Mycorrhizae: ectomycorrhiza and endo mycorrhiza (Photographs). 3. Phytopathology: Herbarium specimens (photgraphs) of bacterial diseases; Citrus Canker; Angular leaf spot of cotton. Viral diseases: TMV, Vein clearing. Fungal diseases: Early blight of potato, Black stem rust of wheat and White rust of crucifers.	B.Sc(H) Botany Sem-II	BHCC3/Mycology and Phytopathology
	Tutorials:			
	<u>Assignment :</u>	Assignment and Test (Theory and Practical)	B.Sc(P) Life Sciences Sem-II Section A and B	LSCC3/Plant Ecology and Taxonomy

CHEMISTRY TEACHING PLAN

ALL TEACHERS

2020-21 EVEN SEMESTER

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr Mercy Jacob **Department: Chemistry**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Coordination Chemistry: IUPAC nomenclature of coordination compounds, isomerism in coordination compounds, stereochemistry of complexes with 4 and 6 coordination numbers. Chelate effect, polynuclear complexes, Labile and inert complexes.	B.Sc. (H) Chemistry IInd Year, Semester - IV (2020)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals	Inorganic Preparations: i. Tetraamminecopper (II) sulphate, ii. Acetylacetonate complexes of Cu^{2+}	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials			
FEBRUARY	**Theory:**	Werner's theory, valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding, Crystal field theory	B.Sc. (H) Chemistry IInd Year, Semester - IV (2020)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals	Preparation of (iv) Potassium tri(oxalato)ferrate(III) Estimation of nickel (II) using Dimethylglyoxime (DMG).	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV

	Tutorials:			
	<u>Assignment :</u>	Coordination chemistry and chemistry of s block elements	B.Sc. (H) Chemistry IInd Year, Semester - IV (2020)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
MARCH	**Theory:**	Measurement of 10 Dq (Δ_o). CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of 10 Dq (Δ_o, Δt). Octahedral vs. tetrahedral coordination	B.Sc. (H) Chemistry IInd Year, Semester - IV (2020)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of copper as CuSCN Preparation of Tetraamminecarbonatocobalt (III) nitrate	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			
	<u>Test</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
APRIL	**Theory:**	Tetragonal distortions from octahedral geometry Jahn-Teller theorem, square planar geometry. Qualitative aspect of Ligand field and MO Theory	B.Sc. (H) Chemistry IInd Year, Semester - IV (2020)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Mixtures preferably contain one interfering anion and combination of anions	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			

MAY	**Theory:**			
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Vibha Saxena
Department: Chemistry **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Basic principles involved in analysis of cations and anions.	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		General properties of elements of 3d series with special reference to electronic configuration, variable valency, colour, magnetic and catalytic properties and ability to form complexes. A brief introduction to Latimer diagrams (Mn, Fe and Cu) and their use to identify oxidizing, reducing species and species which disproportionate. Calculation of skip step potentials. Lanthanoids and actinoids: Electronic configurations, oxidation states displayed. A very brief discussion of colour and magnetic	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**
	Tutorials	NA	NA	NA

FEBRUARY	**Theory:**	Solubility products, common ion effect. Principles involved in separation of cations into groups and choice of group reagents	B.Sc. (H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Brief discussion with examples of types of ligands, denticity and concept of chelate. IUPAC system of nomenclature of coordination compounds (mononuclear and	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals:	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the chemistry of different reactions. The following radicals are suggested: CO_3^{2-}, NO_2^-, S^{2-}, SO_3^{2-}, SO_4^{2-}, $S_2O_3^{2-}$, CH_3COO^-, F^-, Cl^-, Br^-, I^-, NO_3^-, BO_3^{3-}, $C_2O_4^{2-}$, PO_4^{3-}, NH_4^+, K^+, Pb^{2+}, Cu^{2+}, Cd^{2+}, Bi^{3+}, Sn^{2+}, Sb^{3+}, Fe^{3+}, Al^{3+}, Cr^{3+}, Zn^{2+}, Mn^{2+}, Co^{2+}, Ni^{2+}, Ba^{2+}, Sr^{2+}, Ca^{2+}, Mg^{2+}	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**

	Tutorials:	NA	NA	NA
	Assignment :	**Organometallic Chemistry & Bio-inorganic Chemistry Assignment**	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
MARCH	**Theory:**	Interfering anions (fluoride, borate, oxalate and phosphate),	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Bonding in coordination compounds Valence Bond Theory (VBT): Salient features of theory, concept of inner and outer orbital complexes of	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals:	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**
	Tutorials:	NA	NA	NA
	Test	**Organometallic Chemistry & Bio-inorganic Chemistry Test**	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**

APRIL	**Theory:**	need to remove them afterGroup II and methods of removal. Analysis of insoluble substances.	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Crystal Field Theory Splitting of d orbitals in octahedral symmetry. Crystal field effects for weak and strong fields. Crystal field stabilization energy (CFSE), concept of pairing energy. Factors	BSc(P) Life science III year	**DSE1: Chemistry of d-block elements, Quantum chemistry and spectroscopy**
	Practicals:	Qualitative semi-micro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the chemistry of different	B.Sc(H) Chemistry III year	**CHEMISTRY - CXIII: INORGANIC CHEMISTRY – IV Organometallic Chemistry & Bio-inorganic Chemistry**
		Semi-micro qualitative analysis of mixture of two cations and two anions	BSc(P) Life science II year	**Chemistry Practical**
	Tutorials:			

MAY	**Theory:**			
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN

Academic year 2020-2021 (Even Semester)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sanjay Kumar **Department: CHEMISTRY**

Semester: II/IV

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Chemical Kinetics:** Order and molecularity of a reaction, rate laws in terms of the advancement of a reaction, differential and integrated form of rate expressions up to second order reactions.	B.Sc.(H) CHEMISTRY Semester IV B.Sc.(H) CHEMISTRY Semester VI	C X: PHYSICAL CHEMISTRY IV
	Practical	Determination of cell constant Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. Perform the following conductometric titrations: (I) Strong acid vs. strong base .	B.Sc. (H) CHEMISTRY Semester IV B.Sc.(H) CHEMISTRY Semester VI	C X: PHYSICAL CHEMISTRY IV **LAB**
FEBRUARY	**Theory**	**Chemical Kinetics:** Experimental methods for determination of rate laws, kinetics of complex reactions (integrated rate expressions up to first order only): (i) Opposing reactions (ii) parallel reactions and (iii) consecutive reactions and their differential rate equations (steady-state approximation in reaction mechanisms) (iv) chain reactions. Temperature dependence of reaction rates	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV
	Practical	Conductometric titrations: (I)Weak acid vs. strong base (II)Mixture of strong acid and weak acid vs. strong base Study of kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid. Saponification of ethyl acetate	B.Sc. (H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB**
MARCH	**Theory**	**Chemical Kinetics:** Arrhenius equation; activation energy. Collision theory of reaction rates, Lindemann mechanism, qualitative treatment of the theory of absolute reaction rates.	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV

	Practical	Comparison of the strengths of HCl and H_2 SO4 by studying kinetics of hydrolysis of methyl acetate.	B.Sc. (H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB**
APRIL	**Theory**	**Catalysis:** Types of catalyst, specificity and selectivity, mechanisms of catalyzed reactions at solid surfaces. Enzyme catalysis, Michaelis-Menten mechanism, acid-base catalysis	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV
	Practical	Study the kinetics of Iodide-persulphate reaction using (i) Initial rate method (ii) (ii)Integrated rate method Organic synthesis: (i) Bromination of aniline (ii) Benzoylation of aniline and B-naphthol (iii) Semicarbazone of carbonyl compound	B.Sc. (H) CHEMISTRY Semester IV B.Sc. Life Science (prog.) I Year, Semester II	C X: PHYSICAL CHEMISTRY IV **LAB** CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
MAY	**Theory**	**REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION**	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV
	Practical	Thermochemistry: (1). Determination of heat capacity of calorimeter using different volumes. (2). Determination of enthalpy of neutralization of' hydrochloric acid with sodium hydroxide. (3). Determination of integral enthalpy of solution of salts (KNO_3, NH_4 C1). Organic preparation: (i) Oxime formation of cyclohexanone	B.Sc. Life Science (prog.) I Year, Semester II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
JUNE	**Theory**			
	Practical	Determination of enthalpy of hydration of copper sulphate. Preparation of buffer solutions: (i)Sodium acetate-acetic acid (ii)Ammonium chloride-ammonium hydroxide Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Organic preparation: (i) 2,4 DNP derivative preparation of Benzaldehyde	B.Sc. Life Science (prog.) I Year, Semester II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
JULY	**Theory**			
	Practical	**REVISION EXERCISES ALONG WITH VIVA**	B.Sc. Life Science (prog.) I Year, Semester II	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM,

				FUNCTIONAL GROUPS-I
AUGUST	**Theory**			
	Practical			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sharda Pasricha

Department: CHEMISTRY **Semester: II/VI**

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Carbohydrates** Occurrence, classification and their biological importance. Correlation of configuration. Monosaccharides: Constitution and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani- Fischer synthesis and Ruff degradation; Disaccharides – Structure elucidation of maltose, lactose and sucrose. (14 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
	Practical	Qualitative analysis of unknown organic compounds containing monofunctional groups (carbohydrates, aryl halides, aromatic hydrocarbons) 1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III

February	**Theory:**	**Carbohydrates** Polysaccharides – Elementary treatment of starch, cellulose and glycogen. (2 Lectures) **Organic Spectroscopy** General principles Introduction to absorption and emission spectroscopy. UV Spectroscopy: Types of electronic transitions, λmax, Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption; Application of Woodward Rules for calculation of λmax for the following systems: α,β-unsaturated aldehydes, ketones, carboxylic acids and esters; Conjugated dienes: alicyclic, homoannular and heteroannular; Extended conjugated systems (aldehydes, ketones and dienes); distinction between cis and trans isomers.(5 lectures) **Dyes** Classification, Colour and constitution; Mordant and Vat Dyes; Chemistry of dyeing; Synthesis and applications of: Azo dyes – Methyl orange; Triphenyl methane dyes Malachite green and Rosaniline ; Phthalein Dyes – Phenolphthalein; Natural dyes – structure elucidation and synthesis of Alizarin and Indigotin; Edible Dyes with examples.(4 lectures) **IR Spectroscopy**: Fundamental and non-fundamental molecular vibrations; IR absorption. Effect of H-bonding, conjugation, resonance and ring size on IR absorptions; Fingerprint region and its significance. IR absorption positions of O, N and S containing functional groups; application in functional group analysis.(6 Lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
	Practical:	Qualitative analysis of unknown organic compounds containing monofunctional groups (nitro compounds, amines and amides) and simple bifunctional groups, e.g. salicylic acid, cinnamic acid, nitrophenols etc. 1.Functional group test for nitro, amine and amide groups. 2. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III

March	**Theory:**	**NMR Spectroscopy** Basic principles of Proton Magnetic Resonance, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant; Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple compounds. Applications of IR, UV and NMR for identification of simple organic molecules. (8 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
	Practical:	1.Extraction of caffeine from tea leaves. 2.Preparation of urea formaldehyde resin. 1. Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
	<u>Assignment 1 (8 marks)</u> **<u>Crossword (2 Marks)</u>**	Last date of submission:23.03.20 Topic: Carbohydrates Last date of submission:22.03.20 Topic: IR Spectroscopy	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	

April	**Theory:**	**Polymers** Introduction and classification including di-block, tri-block and amphiphilic polymers; Polymerization reactions - Addition and condensation - Mechanism of cationic, anionic and free radical addition polymerization; Metallocene-based Ziegler-Natta polymerization of alkenes; Preparation and applications of plastics – thermosetting (phenol-formaldehyde, Polyurethanes) and thermos softening (PVC, polythene); Fabrics – natural and synthetic (acrylic, polyamido, polyester); Rubbers – natural and synthetic: Buna-S, Chloroprene and Neoprene; Vulcanization; Polymer additives; Introduction to; Biodegradable and conducting polymers with examples. (8 lectures)	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: ORGANIC CHEMISTRY V
		Any Pending Work from Previous Month Revision and Discussion of Previous year papers.		
	Practical:	1. Preparation of methyl orange 2. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy (Spectra to be provided). 3. Mock Practical Exam	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V
		1.Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters) 2. Mock Practical Exam	B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV	CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
		1**. Organic Preparations** (i) Bromination of acetanilide / aniline / phenol (ii) Nitration of nitrobenzene / toluene.	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

MAY	**Practical:**	1.Purification of organic compounds by crystallization using the following solvents: a. Water b. Alcohol c. Alcohol-Water 2. Determination of the melting points of unknown organic compounds (Kjeldahl method and electrically heated melting point apparatus) 3. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds 4. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method)	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
JUNE	**Practical:**	1.Detection of extra elements 2. Chromatography a. Separation of a mixture of two amino acids by ascending and horizontal paper chromatography.	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

JULY	**Practical:**	Chromatography 1.Separation of a mixture of two sugars by ascending paper chromatography 2.Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC) 3.Mock Practical exam	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

SEMESTER WISE TEACHING PLAN 2020-21 even semester

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shefali Shukla

Department: Chemistry **Semester: II/IV/VI**

Month		Topic	Course	Paper
January	**Theory:**	Active methylene compounds *Preparation:* Claisen ester condensation.	B. Sc. (P) Life Sciences III Yr, Semester VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy
	Practicals:	Isolation of caffeine from tea leaves Estimation of aniline by any one of thefollowing methods:a) Acetylation b) Bromate-bromide method	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		Preparation of liquid shampoo Preparation of talcum powder	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
February	**Theory:**	Keto-enol tautomerisin. *Reactions:* Synthetic uses of ethylaeetoacetate	B. Sc. (P) Life Sciences III Yr, Semester V	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy
	Practicals:	Systematic analysis of carboxylic acids Systematic analysis of phenolic compounds Systematic analysis of carbonyl compounds Assessment -1 Assessment -2	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		Preparation of face cream Preparation of nail paint and remover Preparation of hair remover Assessment-1	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
March	**Theory:**	Structure elucidation of naphthalene, preparation and properties of naphthalene and anthracene	B. Sc. (P) Life Sciences III Yr, Semester V	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy
	Practicals:	Systematic analysis of carbonyl alcohols Systematic analysis of esters Assessment -3	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III

		Preparation of powder shampoo Assessment -2	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
	Assignment	Assignment -1		
April	**Theory:**	**Fundamental** Concept of Hybridisation, Electronic displacements and their applications, Homolytic and heterolytic fissions. Types, shape and relative stability of reaction intermediates. Weaker forces like van der Waals forces and hydrogen bonding, Electrophiles and nucleophiles, and introduction to types of organic reactions. **Stereoisomerism:** Optical activity and optical isomerism, asymmetry, chirality,	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons
		Properties with reference to electrophilic and nucleophilic substitution:Heterocyclic compounds- Pyrrole, Pyridine	B. Sc. (P) Life Sciences III Yr, Semester V	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy
	Practicals:	SCH Assessment -4	B. Sc. (H) Chemistry II Yr, Semester IV	CHEMISTRY - CIX: ORGANIC CHEMISTRY – III
		TLS Assessment -3	B. Sc. (P) Life Sciences III Yr, Semester V	SEC- cosmetic chemistry
	Tutorials:	NA	NA	NA
	Test	Mid term test	B. Sc. (P) Life Sciences III Yr, Semester V	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and spectroscopy
May	**Theory**	Stereochemistry; enantiomers, diastereomers. specific rotation; Configuration and projection formulae: Newmann, Sawhorse, Fischer and their interconversion. Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and butane). General molecular formulae of	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons

		cycloalkanes and relative stability, Baeyer strain theory, Cyclohexane conformations with energy diagram, Axial and equatorial positions. Conformations of monosubstituted cyclohexanes.		
	Practical			
	Tutorial			
June	**Theory**	Chirality in molecules with one and two stereocentres; meso configuration. Racemic mixture and their resolution. Relative and absolute configuration: D/L and R/S designations. Geometrical isomerism: cis-trans, syn-anti and E/Z notations using CIP rules. Structure and isomerism.General methods of preparation, physical and chemical properties. Mechanism, of E1, E2, E1cb reactions, Saytzeff and Hoffmann eliminations, Electrophilic Additions, mechanism with suitable examples, (Markownikoff/Antimarkownikoff addition), *syn* and *anti*-addition;		
	Practical			
	Tutorial			
	ASSESSMENT	**FCH Assignment-1**		
July	**Theory**	Alkenes contd-addition of H2, X2, oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, Diels Alder reaction, 1,2-and 1,4-addition reactions in conjugated dienes. Mechanism of allylic and benzylic bromination in propene, 1-butene, toluene,ethyl benzene. Reactions of alkynes; acidity, electrophilic and nucleophilic additions, hydration to form carbonylcompounds, Alkylation of terminal alkynes		
	Practical			
	Tutorial			
	ASSESSMENT	TEST		

SEMESTER WISE TEACHING PLAN (2020-21)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. PRAGYA GAHLOT
Department: CHEMISTRY **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Programming Language – QBASIC; Commands:** INPUT and PRINT Commands; GOTO, If, ELSEIF, THEN and END IF Commands; FOR and NEXT Commands; Library Functions (ABS, ASC, CHR$, EXP,INT, LOG, RND, SQR, TAB and trigonometric Functions), DIM, READ, DATA, REM, RESTORE, DEF	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practicals	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		I. Determination of cell constant II. Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. III. Perform the following conductometric titrations: i. Strong acid vs. strong base ii. Weak acid vs. strong base iii. Mixture of strong acid and weak acid vs. strong base iv. Strong 1. acid vs. weak base	B.Sc. (Hons.) Chemistry sem IV	**C X: *PHYSICAL CHEMISTRY IV***

Februar y	**Theory :**	QBASIC programs for Chemistry problems - Example: plotting van der Waal Isotherms (Simple Problem, available in general text	B.Sc. CHEMISTR Y (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practic als:	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		1. Acid hydrolysis of methyl acetate with hydrochloric acid. 2. Comparison of the strengths of HCl and H2SO4 by studying kinetics of	B.Sc. (Hons.) Chemistry sem IV	**C X: *PHYSICAL CHEMISTRY IV***
March	**Theory :**	Solution of quadratic equation, polynomial equations (formula, iteration and Newton – Raphson methods, binary bisection and Regula Falsi); Numerical differential, Numerical integration (Trapezoidal rule), Simultaneous equations.	B.Sc. CHEMISTR Y (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practic als:	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		Acid hydrolysis of methyl acetate with hydrochloric acid. Saponification of ethyl acetate	B.Sc. (Hons.) Chemistry sem IV	**C X: *PHYSICAL CHEMISTRY IV***
	Assign ment :		B.Sc. CHEMISTR Y (Hons.) III Year,	DSE: Applications of computers in Chemistry

	Test		B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry

April	**Theory**	Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, Ostwald's dilution law, ionization constant and ionic product of water	B.Sc.(P) Life sciences I year, Semester II	Chemistry Core II
	Practical	**Basic Computer system (in brief)-**Hardware and Software; Input devices, Storage devices, Output devices, Central Processing Unit (Control Unit and Arithmetic Logic Unit); Number system (Binary, Octal and Hexadecimal Operating System); Computer Codes (BCD and ASCII)**;** Numeric/String constants and variables. Operating Systems (DOS, WINDOWS, and Linux); Software languages: Low level and High Level languages (Machine language, Assembly language; QBASIC, FORTRAN and C++); Software Products (Office, chemsketch, scilab, matlab, hyperchem, etc.), internet application.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
		Study the kinetics of the following reactions. 1. Iodide-persulphate reaction (i) Initial rate method; (ii)Integrated rate method	B.Sc. (Hons.) Chemistry sem IV	**C X:** ***PHYSICAL CHEMISTRY IV***
		(a) Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system (method of back	B.Sc.(H) Chemistry I year, Semester II	Lab C-IV: Physical chemistry-II
May	**Theory**	ionization of weak acids and bases, pH scale, common ion effect	B.Sc.(P) Life sciences I year, Semester II	Chemistry Core II

	Practical	(f) Determination of enthalpy of hydration of salt. G) Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc.(H) Chemistry I year, Semester II	Lab CC-IV: Physical chemistry-II
June	**Theory**	Buffer solutions,Henderson-Hasselbach equation.	B.Sc.(P) Life sciences I year, Semester II	Chemistry Core II
	Practical	(d) Determination of integral enthalpy (endothermic and exothermic) solution of salts. (e) Determination of basicity of a diprotic acid by the thermochemical method in	B.Sc.(H) Chemistry I year, Semester II	Lab C-IV: Physical chemistry-II
July	**Theory**	salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts	B.Sc.(P) Life sciences I year, Semester II	Chemistry Core II
	Practical	Determination of enthalpy of hydration of salt. Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc.(H) Chemistry I year, Semester II	Lab CC-IV: Physical chemistry-II
August	**Theory**	**Revision**		
	Practical	**Revision**	B.Sc. (Hons.) Chemistry I year Semester II	Lab CC-IV: Physical chemistry-II

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mr Harshvardhan Meena
Department: Chemistry **Semester : II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Qualitative and quantitative aspects of analysis:** Sampling, evaluation of analytical data,	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		General Principles of Metallurgy Chief modes of occurrence of metals based on standard electrode potentials.	GE-IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals	(i) Paper chromatographic separation of Co2+ and Ni2+. (ii) Separation and identification of the	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Determination of pH of soil samples. b. Estimation of Calcium and Magnesium complexometric titration	BSc. (P) Life Science II Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
		Section B: Physical Chemistry (I) Surface tension measurement (use of organic solvents excluded) a) Determination of the surface tension of a liquid or a dilute solution using a stalagmometer. b) Study of the variation of surface tension of a detergent solution with concentration.	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium

	Tutorials	NA	NA	NA
FEBRUARY	**Theory:**	errors, accuracy and precision, methods of their expression, normal law of distribution of indeterminate errors, statistical test of data; F, Q and t test, rejection of data, and confidence intervals.	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Ellingham diagrams for reduction of metal oxides using carbon as reducing agent. Hydrometallurgy with reference to cyanide process for silver and gold, Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn).	GE-IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals:	(i) To separate a mixture of Ni 2+ & Fe2+ by complexation with DMG and extracting the Ni2+-DMG complex in chloroform, and determine its concentration by spectrophotometry. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Determination of pH, acidity and alkalinity of a water sample. b. Determination of dissolved oxygen (DO) of a water sample. Paper chromatographic separation of mixture of metal ion (Ni2+ and Co2+).	BSc. (P) Life Science II Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**

		(II) Viscosity measurement (use of organic solvents excluded) a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
	Tutorials:	NA	NA	NA

	Assignment :			
MARCH	**Theory:**	confidence intervals. Chromatography: Classification, principle and efficiency of the technique. Mechanism of separation: adsorption, partition & ion exchange.	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Electrolytic, oxidative refining, van Arkel-de Boer process and Mond's process.	GE-IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals:	(iii) Estimation of calcium, magnesium (iv) Qualitative detection of nitrate, phosphate	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).	BSc. (P) Life Science II Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
		(III) Phase equilibria a) Construction of the phase diagram of a binary system (simple eutectic) using cooling curves.	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
	Tutorials:	NA	NA	NA
	Test			

APRIL	**Theory:**	Development of chromatograms: frontal, elution and displacement methods.	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Hydrides of nitrogen (NH3, N2H4, N3H, NH2OH) Oxoacids of P, S and Cl. Halides and oxohalides: PCl3, PCl5, SOCl2 and SO2Cl2	GE-IV	CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals:	Spectrophotometry Verification of Lambert-Beer's law and determination of concentration of a coloured species (CuSO4, KMnO4)	B.Sc. (Hons) Chemistry III year	DSE: ANALYTICAL METHODS IN CHEMISTRY
		Revision	BSc. (P) Life Science II Year	Skill Enhancement Course **BASIC ANALYTICAL CHEMISTRY**
		b) Determination of the critical solution temperature and composition of the phenol water system and study of the effect of impurities on it. c) Study of the variation of	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
	Tutorials:	NA	NA	NA

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: **Dr. Vinita Kapoor** **Department:** **Chemistry**

Month		Topics	Course	Paper Code/Name
JAN	**Practicals**	I. Determination of cell constant II. Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. III. Perform the following conductometric titrations: i. Strong acid vs. strong base ii. Weak acid vs. strong base iii. Mixture of strong acid and weak acid vs. strong base iv. Strong 2. acid vs. weak base	B.Sc. (Hons.) Chemistry sem IV	**C X:** ***PHYSICAL CHEMISTRY IV***
	Practicals	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month		Topics	Course	Paper Code/Name
FEB	**Practicals**	1. Acid hydrolysis of methyl acetate with hydrochloric acid. 2. Comparison of the strengths of HCl and H_2SO_4 by studying kinetics of hydrolysis of methyl acetate.	B.Sc. (Hons.) Chemistry sem IV	**C X:** ***PHYSICAL CHEMISTRY IV***
	Practicals	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month		Topics	Course	Paper Code/Name

MARCH	**Practicals**	Acid hydrolysis of methyl acetate with hydrochloric acid. Saponification of ethyl acetate.	B.Sc. (Hons.) Chemistry sem IV	**C X: *PHYSICAL CHEMISTRY IV***
	Practicals	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). 3. Numerical integration (e.g.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**
Month			Course	Paper Code/Name
APRIL	**Theory**	**Chemical Thermodynamics:** Intensive and extensive variables; state and path functions; isolated, closed and open systems. Mathematical treatment - Exact and inexact differential, Partial derivatives, Euler's reciprocity rule, cyclic rule. **First law:** Concept of heat, Q, work, W, internal energy, U, and statement of first law; enthalpy, H, relation	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY – II**
	Practicals	(a) Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization), and (ii) heat gained equal to heat lost by cold water and hot water respectively (b) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. (c) Determination of the enthalpy of ionization of ethanoic acid.	B.Sc. (Hons.) Chemistry sem II	CC-IV: Physical chemistry-II
	Practicals	Study the kinetics of the following reactions. 1. Iodide-persulphate reaction (i) Initial rate method; (ii)Integrated rate method	B.Sc. (Hons.) Chemistry sem IV	**C X: *PHYSICAL CHEMISTRY IV***

	Practicals	Graphic programs related to Chemistry problems. *e.g.* van der Waals isotherm, Compressibilty versus pressure curves, Maxwell distribution curves, concentration-time Graph, pH metric titration curve, conductometric titration curves, Lambert Beer's law graph, s, p, d orbital shapes, radial distribution curves, etc.	B.Sc. (Hons.) Chemistry sem VI	**CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY**

Month		Topics	Course	Paper Code/Name
MAY	**Theory**	**First law:** Joule Thompson Porous Plug experiment, Nature of Joule Thompson coefficient, calculations of Q, W, ΔU and ΔH for reversible, irreversible and free expansion of gases (ideal and van der Waals) under isothermal and adiabatic conditions. **Thermochemistry**: Enthalpy of reactions: standard states; enthalpy of neutralization, enthalpy of hydration, enthalpy of formation and enthalpy of combustion and its applications, bond dissociation energy and bond enthalpy; effect of temperature (Kirchhoff's equations) on enthalpy of reactions.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**
	Practicals	(d) Determination of integral enthalpy (endothermic and exothermic) solution of salts. (e) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step.	B.Sc. (Hons.) Chemistry sem II	C-IV: Physical chemistry-II
Month		Topics	Course	Paper Code/Name

JUNE	**Theory**	**Second Law:** Concept of entropy; statement of the second law of thermodynamics, Carnot cycle. Calculation of entropy change for reversible and irreversible processes (for ideal gases).	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**
	Practicals	(f) Determination of enthalpy of hydration of salt. G) Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc. (Hons.) Chemistry sem II	CC-IV: Physical chemistry-II
Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Free Energy Functions: Gibbs and Helmholtz energy; variation of S, G, A with T, V, P; Free energy change and spontaneity (for ideal gases). Relation between Joule-Thomson coefficient and other thermodynamic parameters; inversion temperature; Gibbs-Helmholtz equation; Maxwell relations; thermodynamic equations of state.	B.Sc. (Hons.) Chemistry sem II	**C IV: PHYSICAL CHEMISTRY - II**
	Practicals	Determination of enthalpy of hydration of salt. Determination of integral enthalpy (endothermic and exothermic) solution of salts. MOCK VIVA	B.Sc. (Hons.) Chemistry sem II	CC-IV: Physical chemistry-II

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Shikha Gulati Department: Chemistry

Semester: VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Organometallic Compounds** Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18 electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series.	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals			
		(i) Paper chromatographic separation of Co2+ and Ni2+. (ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the Rf values.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		1. Determination of pH of soil samples. 2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration. 3. Determination of pH, acidity and alkalinity of a water sample	BSc (P) Life Science II year	Basic Analytical Chemistry
	Tutorials	NA	NA	NA

FEBRUARY	**Theory:**	Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT. π-acceptor behaviour of CO (MO diagram of CO to be discussed), synergic effect and use of IR data to explain extent of back bonding. Zeise's salt: Preparation and structure, evidences of synergic effect and comparison of synergic effect with that in carbonyls. Metal Alkyls: Important structural features of methyl lithium (tetramer) and trialkyl aluminium (dimer), concept of multicentre bonding in these compounds. Ferrocene: Preparation and reactions (acetylation, alkylation, metallation, Mannich Condensation). Structure and aromaticity. Comparison of aromaticity and reactivity with that of benzene. **Catalysis by Organometallic Compounds** Study of the following industrial processes and their mechanism: 1. Alkene hydrogenation (Wilkinson's Catalyst) 2. Synthetic gasoline (Fischer Tropsch reaction) 3. Polymerisation of ethene using Ziegler-Natta catalyst	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

	Practicals:	4. Determination of dissolved oxygen (DO) of a water sample. 5. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+}). 6. To study the use of phenolphthalein in trap cases.	BSc (P) Life Science II year	Basic Analytical Chemistry
		(i) To separate a mixture of Ni^{2+} & Fe^{2+} by complexation with DMG and extracting the Ni^{2+}-DMG complex in chloroform, and determine its concentration by spectrophotometry. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	Tutorials:	NA	NA	NA

	Assignment :	Organometallics and Bioinorganic Chemistry	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
MARCH	**Theory:**	**Bioinorganic Chemistry:** Metal ions present in biological systems, classification of elements according to their action in biological system. Geochemical effect on the distribution of metals. Sodium / K-pump, carbonic anhydrase and carboxypeptidase. Excess and deficiency of some trace metals. Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Use of chelating agents in medicine, Cisplatin as an anti-cancer drug. Iron and its application in bio-systems, Haemoglobin, Myoglobin; Storage and transfer of iron.	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals:	To analyze arson accelerants. 8. To carry out analysis of gasoline.	BSc (P) Life Science II year	Basic Analytical Chemistry
		(iii) Estimation of calcium, magnesium (iv) Qualitative detection of nitrate, phosphate	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	Tutorials:	NA	NA	NA
	Test	Organometallics and Bioinorganic Chemistry	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV

APRIL	**Theory:**	**Catalysis by Organometallic Compounds** Study of the following industrial processes and their mechanism: 1. Alkene hydrogenation (Wilkinson's Catalyst) 2. Synthetic gasoline (Fischer Tropsch reaction) 3. Polymerisation of ethene using Ziegler-Natta catalyst	B.Sc. (Hons.) Chemistry III Year	C XIII: INORGANIC CHEMISTRY IV
	Practicals:	9. Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry. Spectrophotometric determination of Iron in vitamin / dietary tablets. 11. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink. 12. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).	BSc (P) Life Science II year	Basic Analytical Chemistry
		Spectrophotometry Verification of Lambert-Beer's law and determination of concentration of a coloured species ($CuSO_4$, $KMnO_4$)	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
	Tutorials:	NA	NA	NA

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE-2020-21 (even)

Name of the Faculty: Dr. POOJA Department: CHEMISTRY

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	General introduction to pesticides (natural and synthetic), benefits and adverse effects, changing concepts of pesticides, structure activity relationship	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	Practicals	To calculate acidity in given sample of pesticide formulations as per BIS specifications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
FEBRUARY	**Theory:**	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organochlorines (DDT, Gammexene).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	Practicals:	To calculate alkalinity in given sample of pesticide formulations as per BIS specifications.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
MARCH	**Theory:**	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organophosphates (Malathion, Parathion), Carbamates (Carbofuran and carbaryl).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	Practicals:	Preparation of phenylethylamine thiocarbamate as organic pesticide.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
	Assignment	To solve last 4 semesters Pesticides chemistry question papers.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY

APRIL	**Theory:**	Synthesis and technical manufacture and uses of representative pesticides in the following classes: Quinones (Chloranil), Anilides (Alachlor and Butachlor).	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Concept of Aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I
	Practicals:	Practice exercise.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
		Organic Preparations (i) Bromination of acetanilide use green method (ii) Nitration of nitrobenzene use green method.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		Bromination of aniline and acetanilide	B.Sc. Life Science (prog.) I Year, Semester II	CHEMISTRY –Core Paper-2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical
	Test	Upto organophosphates as pesticides.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Aromatic Hydrocarbon	B.Sc. CHEMISTRY (Hons.) I Year,	CHEMISTRY – CIII: ORGANIC CHEMISTRY
MAY	**Theory:**	Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons
	Practicals:	Purification of organic compounds by crystallization using the following solvents: (a) Water (b) Alcohol (c) Alcohol-Water Detection of extra elements.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		Benzoylation of amines/phenols	B.Sc. Life Science (prog.) I Year, Semester II	CHEMISTRY –Core Paper-2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical

JUNE	**Theory:**	Directing effects of groups in electrophilic substitution. General methods of preparation-Wurtz and Wurtz Fittig reaction, Corey House synthesis	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons
	Practicals:	Determination of the melting points of unknown organic compounds (Kjeldahl method and BODMel method) Effect of impurities on the melting point-mixed melting point of two unknown organic compounds Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method) Chromatographic Separation of a mixture of two amino acids by ascending and horizontal paper chromatography	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
JULY	**Theory:**	Physical and chemical properties of alkanes, Free radical substitutions; Halogenation, concept of relative reactivity v/s selectivity.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons
	Practicals:	Practice exercise	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		Practice Exercise	B.Sc. Life Science (prog.) I Year, Semester II	CHEMISTRY –Core Paper-2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I: Practical

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Deepti Sharma **Department: Chemistry**

Semester: II/IV/ VI

Month		Topics	Course	Paper Code/Na
JANUARY	**Theory**	Nitrogen Containing Functional Groups	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**
	Practicals	1. Functional group test for nitro, amine and amide groups 2. Estimation of aniline by any one of thefollowing methods:a) Acetylation b) Bromate-bromide method	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
		1. Extraction of caffeine from tea leaves. 2. Preparation of urea formaldehyde resin 3. .Preparation of methyl orange dye.	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
		1. To calculate acidity/alkalinity in given sample of pesticide formulations as per BIS specifications.	**B.Sc.(H) Chemistry Second Year Semester IV**	**Pesticide Chemistry**
FEBRUARY	**Theory**	Nitrogen Containing Functional Groups cont.	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**

	Practicals:	3. Qualitative analysis of unknown organic compounds containing simple functional groups 4. Isolation of caffeine from tea leaves	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
		1. Qualitative analysis of unknown organic compounds containing monofunctional groups	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
		1. Preparation of simple organophosphates.	**B.Sc.(H) Chemistry Second Year Semester IV**	**Pesticide Chemistry**
	Assignment:	Given Assignment for Nitrogen containing functional group		
MARCH	**Theory:**	Heterocyclic Compounds, Terpenes	**B.Sc.(H) Chemistry Semester IV**	**Organic Chemistry III**
	Practicals:	1. Practiced qualitative analysis of unknown organic compounds containing simple functional groups	**B.Sc.(H) Chemistry Second Year Semester IV**	**Organic Chemistry III**
		1. Practiced qualitative analysis of unknown organic compounds containing monofunctional groups	**B.Sc.(H) Chemistry Third Year Semester VI**	**Organic Chemistry V**
		1. Students did market survey of different pesticides	**B.Sc.(H) Chemistry Second Year Semester IV**	**Pesticide Chemistry**

	Test	Syllabus included Nitrogen containing compounds, poylnuclear hydrocarbons.		
APRIL	**Theory:**	Alkaloids Alcohols, Phenols	**B.Sc.(H) Chemistry Semester IV** **B.Sc. Life Science Semester II**	**Organic Chemistry III** **Chemical Energetics, Equilibria and Functional Group Organic Chemistry -I**
	Practicals:	1. Practiced qualitative analysis of unknown organic compounds containing simple functional groups. 2. Mock Test 1. Practiced qualitative analysis of unknown organic compounds containing monofunctional groups. 2. Mock Test 1. Final Practical Examination.	**B.Sc.(H) Chemistry Second Year Semester IV** **B.Sc.(H) Chemistry Third Year Semester VI** **B.Sc.(H) Chemistry Second Year**	**Organic Chemistry III** **Organic Chemistry V** **Pesticide Chemistry**

MAY	**Theory:**	Phenols contd. Ethers started	**B.Sc. Life Science Semester II**	**Chemical Energetics, Equilibria and Functional Group Organic**
	Practicals:			
	Tutorials:			
JUNE	**Theory:**	Ethers conts. Aldehydes and ketones started	**B.Sc. Life Science Semester II**	**Chemical Energetics, Equilibria and Functional Group**
	Practicals:			
	Tutorials:			
	Test:	Test given syllabus included alcohols, phenols and ethers	**B.Sc. Life Science Semester II**	**Chemical Energetics, Equilibria and Functional Group**
JULY	**Theory:**	Aldehydes and ketones contd.		
	Practicals:			
	Tutorials:			
	Assignment	Assignment given syllabus included aldehydes and ketones and ethers	**B.Sc. Life Science Semester II**	**Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I**

SEMESTER WISE TEACHING PLAN

Academic year 2020-2021 (Even Semester)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Ms. Laishram Saya Devi **Department: CHEMISTRY**

Semester: II/IV

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**CONDUCTANCE:** Quantitative aspects of Faraday's laws of electrolysis Arrhenius theory of electrolytic dissociation. Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Molar conductivity at infinite dilution. Kohlrausch law of independent migration of ions. Debye-Hückel-Onsager equation, Wien effect, Debye-Falkenhagen effect.	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV
	Practical	Determination of cell constant Determination of conductivity, molar conductivity, degree of dissociation and dissociation constant of a weak acid. Perform the following conductometric titrations: (II) Strong acid vs. strong base 1.Introductory class 2. Viscosity measurement (use of organic solvents excluded). (a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer. (b)Study of the variation of viscosity of an aqueous solution with concentration of solute.	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB** CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
FEBRUARY	**Theory**	**CONDUCTANCE:** Walden's rules. Ionic velocities, mobilities and their determinations, transference numbers and their relation to ionic mobilities, determination of transference numbers using Hittorf and Moving Boundary methods. Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts, (iv) conductometric titrations, and (v) hydrolysis constants of salts	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV
	Practical	Conductometric titrations: (I)Weak acid vs. strong base (II)Mixture of strong acid and weak acid vs. strong base Study of kinetics of Acid hydrolysis of methyl acetate with hydrochloric acid. Saponification of ethyl acetate Semi-micro qualitative analysis of mixtures (two anions and two cations and excluding insoluble salts)	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB** CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
MARCH	**Theory**	**PHOTOCHEMISTRY:** Characteristics of electromagnetic radiation, Lambert-Beer's law and its limitations, physical	B.Sc.(H) CHEMISTRY Semester IV	C X: PHYSICAL CHEMISTRY IV

		significance of absorption coefficients. Laws, of photochemistry, quantum yield, actinometry.		
	Practical	Comparison of the strengths of HCl and H_2 SO4 by studying kinetics of hydrolysis of methyl acetate. Surface tension measurement (use of organic solvents excluded). Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV	C X: PHYSICAL CHEMISTRY IV **LAB** CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
APRIL	**Theory**	**PHOTOCHEMISTRY:** examples of low and high quantum yields, photochemical equilibrium and the differential rate of photochemical reactions, photosensitised reactions, quenching. Role of photochemical reactions in biochemical processes, photo stationary states, chemiluminescence **SYSTEMS OF VARIABLE COMPOSITION** Partial molar quantities, dependence of thermodynamic parameters on composition; Gibbs Duhem equation, chemical potential of ideal mixtures, Change in thermodynamic functions on mixing of ideal gases.	B.Sc.(H) CHEMISTRY Semester IV B.Sc.(H) CHEMISTRY Semester II	C X: PHYSICAL CHEMISTRY IV C IV: PHYSICAL CHEMISTRY II
	Practical	Study the kinetics of Iodide-persulphate reaction using (iii) Initial rate method (iv) (ii)Integrated rate method Mixture analysis exercises Organic synthesis: (i) Bromination of aniline (ii) Benzoylation of aniline and B-naphthol (iii) Semicarbazone of carbonyl compound	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV GE-II	C X: PHYSICAL CHEMISTRY IV **LAB** CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
MAY	**Theory**	**REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION** **CHEMICAL EQUILIBRIUM:** Criteria of thermodynamic equilibrium, degree of advancement of reaction, Chemical equilibria in ideal gases, Thermodynamic derivation of relation between Gibbs free energy of a reaction and reaction quotient, Equilibrium constants and their dependence on temperature, pressure and concentration, Le Chatelier's Principle (Quantitative treatment), Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase.	B.Sc.(H) CHEMISTRY Semester IV B.Sc.(H) CHEMISTRY Semester II	C X: PHYSICAL CHEMISTRY IV C IV: PHYSICAL CHEMISTRY II
	Practical	Thermochemistry: (1). Determination of heat capacity of calorimeter using different volumes.	**GE-II**	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC

		(2). Determination of enthalpy of neutralization of' hydrochloric acid with sodium hydroxide. (3). Determination of integral enthalpy of solution of salts (KNO_3, NH_4 C1). Organic preparation: (i) Oxime formation of cyclohexanone		EQUILIBRIUM, FUNCTIONAL GROUPS-I
JUNE	**Theory**	**CHEMICAL EQUILIBRIUM:** Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase. **SOLUTIONS AND COLLIGATIVE PROPERTIES**: Dilute solutions; lowering of vapour pressure, Raoult's law, Henry's law. Thermodynamic basis of the colligative properties - lowering of vapour pressure, elevation of Boiling Point, Depression of Freezing point and Osmotic pressure and derivation of expressions for these using chemical potential.	B.Sc.(H) CHEMISTRY Semester II	C IV: PHYSICAL CHEMISTRY II
	Practical	Determination of enthalpy of hydration of copper sulphate. Preparation of buffer solutions: (i)Sodium acetate-acetic acid (ii)Ammonium chloride-ammonium hydroxide Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Organic preparation: (i) 2,4 DNP derivative preparation of Benzaldehyde	**GE-II**	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
JULY	**Theory**	**SOLUTIONS AND COLLIGATIVE PROPERTIES**: Application of colligative properties in calculating molar masses of normal, dissociated and associated solutes in solutions. Concept of activity and activity coefficients. **THIRD LAW OF THERMODYNAMICS:** Statement of third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy, calculation of absolute entropy of solid, liquid and gases. **MAXWELL RELATIONS**	B.Sc.(H) CHEMISTRY Semester II	C IV: PHYSICAL CHEMISTRY II
	Practical	**REVISION EXERCISES ALONG WITH VIVA**	**GE-II**	CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
AUGUST	**Theory**	**REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION**	B.Sc.(H) CHEMISTRY Semester II	C IV: PHYSICAL CHEMISTRY II
	Practical			

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Year 2020-2021 (Even)
Name of the Faculty: Dr. Rekha Yadav
Department: Chemistry **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
JANUARY				
	Practical	Small programs for mathematical computations in BASIC language. Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
FEBRUARY	**Theory**			
	Practical	Probability distributions (gas kinetic theory) and mean values. Matrix operations.	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
MARCH	**Theory**			
	Practical	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). 3. Numerical integration (e.g. entropy/ enthalpy change from heat capacity data).	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
APRIL	**Theory**	**SYSTEMS OF VARIABLE COMPOSITION** Partial molar quantities, dependence of thermodynamic parameters on composition; Gibbs Duhem equation, chemical potential of ideal mixtures, Change in thermodynamic functions on mixing of ideal gases.	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
		Ionic Equilibria **Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization,** **Ostwald's dilution law, ionization constant and ionic product of water, ionization of weak acids and bases,** **pH scale, common ion effect, salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and** **pH for different salts.**	GE- II	CHEMISTRY –GE-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	(a) Determination of heat capacity of a calorimeter for different volumes using (i) change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization), and (ii) heat gained equal to heat lost by cold water and hot water respectively (b) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc.(H) Chemistry I year, Semester II	Lab C-IV: Physical chemistry-II

		(c) Determination of the enthalpy of ionization of ethanoic acid.		
		Graphic programs related to Chemistry problems. *e.g.* van der Waals isotherm, Compressibilty versus pressure curves, Maxwell distribution curves, concentration-time Graph, pH metric titration curve, conductometric titration curves, Lambert Beer's law graph, s, p, d orbital shapes, radial distribution curves, etc.	B.Sc. (Hons.) Chemistry III year, Semester VI	Lab CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		Preparations: (Mechanism of various reactions involved to be discussed) (Recrystallization, determination of melting point and calculation of quantitative yields to be done in all cases) 1. Bromination of phenol/aniline 2. Determination of heat capacity of calorimeter. 3. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc. (P) Life Sciences I year Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
MAY	**Theory**	**CHEMICAL EQUILIBRIUM:** Criteria of thermodynamic equilibrium, degree of advancement of reaction, Chemical equilibria in ideal gases, Thermodynamic derivation of relation between Gibbs free energy of a reaction and reaction quotient, Equilibrium constants and their dependence on temperature, pressure and concentration, Le Chatelier's Principle (Quantitative treatment), Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase.	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
		Buffer solutions, Henderson-Hasselbalch equation. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.	GE- II	CHEMISTRY –GE-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	(d) Determination of integral enthalpy (endothermic and exothermic) solution of salts. (e) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step.	B.Sc.(H) Chemistry I year, Semester II	Lab C-IV: Physical chemistry-II
		4. Benzoylation of amines/phenols 5. Oxime of aldehydes and ketones 6. Determination of integral enthalpy of solution of salts KNO3	B.Sc. (P) Life Sciences I year Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
JUNE	**Theory**	**CHEMICAL EQUILIBRIUM:** Free energy of mixing and spontaneity, Equilibrium between ideal gases and a pure condensed phase. **SOLUTIONS AND COLLIGATIVE PROPERTIES**: Dilute solutions; lowering of vapour pressure, Raoult's law, Henry's law. Thermodynamic basis of the colligative properties - lowering of vapour pressure, elevation of Boiling Point, Depression of Freezing point and Osmotic pressure and	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II

		derivation of expressions for these using chemical potential.		
		Chemical Equilibrium **Free energy change in a chemical reaction, Thermodynamic derivation of the law of chemical equilibrium,** **distinction between G and Go, Le Chatelier's principle, relationships between Kp, Kc and Kx for reactions** **involving ideal gases.**	GE- II	CHEMISTRY –GE-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	(f) Determination of enthalpy of hydration of salt. G) Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc.(H) Chemistry I year, Semester II	Lab CC-IV: Physical chemistry-II
		7. Determination of integral enthalpy of solution of salts NH4Cl. 8. Determination of enthalpy of hydration of copper sulphate. 9. 2,4-dinitrophenylhydrazone of aldehydes and ketones 10. Semicarbazone of aldehydes and ketones	B.Sc. (P) Life Sciences I year Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
JULY	**Theory**	**SOLUTIONS AND COLLIGATIVE PROPERTIES**: Application of colligative properties in calculating molar masses of normal, dissociated and associated solutes in solutions. Concept of activity and activity coefficients. **THIRD LAW OF THERMODYNAMICS:** Statement of third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy, calculation of absolute entropy of solid, liquid and gases. **MAXWELL RELATIONS**	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
		Chemical Energetics **Review of thermodynamics and the laws of thermodynamics, important principles and definitions of** **thermochemistry, concept of standard state and standard enthalpies of formations, integral and differential enthalpies of solution and dilution, calculation of bond energy, bond dissociation energy and** **resonance energy from thermochemical data, variation of enthalpy of a reaction with temperature –** **Kirchhoff's equation., statement of third law of thermodynamics and calculation of absolute entropies of** **substances**	GE- II	CHEMISTRY –GE-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	Determination of enthalpy of hydration of salt. Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc.(H) Chemistry I year, Semester II	Lab CC-IV: Physical chemistry-II
		11. Preparation of buffer solutions: (i) Sodium acetate-acetic acid 12. (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values.	B.Sc. (P) Life Sciences I year Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

AUGUST	**Theory**	**REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION**	B.Sc.(H) Chemistry I year, Semester II	C IV: PHYSICAL CHEMISTRY II
		REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION	GE- II	CHEMISTRY –GE-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practical	**Revision**	B.Sc. (Hons.) Chemistry I year Semester II	Lab CC-IV: Physical chemistry-II
		Revision	B.Sc. (P) Life Sciences I year Semester II	Lab CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

SEMESTER WISE TEACHING PLAN-2020-2021
EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Rangarajan T. M.
Department: Chemistry **Semester: II/IV/VI**

Month		Topic	Course	Paper
January	**Theory:**	Aromaticity of polynuclear hydrocarbons, structure elucidation of naphthalene. Chromatography Definition and general introduction on principles of chromatography. Paper chromatography.	B. Sc. (H) Chemistry-II year (SCH): Sem-IV B. Sc. (P) Life Science-II year (SLS-SEC):sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY-III Basic Analytical Chemistry
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups (Theory, introduction, Known compounds given)	B. Sc. (H) Chemistry, III Year (TCH), Sem-VI	CHEMISTRY - C XIV: Organic Chemistry V
	Practicals:	Preparation of any two of the following complexes and measurement of their conductivity: (i) tetraamminecarbonatocobalt (III) nitrate Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, alcoholic) and preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy
	Practicals:			
	Tutorials:	NA	NA	NA
February	**Theory:**	Preparation and properties of naphthalene. Thin layer Chromatography, Column chromatography and ion-exchange chromatography.	B. Sc. (H) Chemistry, II year (SCH): Sem-IV B. Sc. (P) Life Science-II year (SLS-SEC): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY III Basic Analytical Chemistry
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups (Known compounds given), Extraction of caffeine from tea leaves.	B. Sc. (H) Chemistry, III Year (TCH)-Sem-VI	CHEMISTRY - C XIV: Organic Chemistry V

		Tetraamminecopper (II) sulphate Potassium trioxalatoferrate (III) trihydrate Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (phenolic, aldehydic) and preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy
	Tutorials:	NA	NA	NA
March	**Theory:**	Preparation and properties of phenanthrene and anthracene.	B. Sc. (H) Chemistry, II year (SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY III
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups (Unknown compounds given), Preparation of methyl orange.	B. Sc. (H) Chemistry, III Year (TCH)-Sem-VI	CHEMISTRY - C XIV: Organic Chemistry V
		Separation of mixtures by chromatography: Measure the Rf values of each. Paper chromatographic separation of Fe3+, Al3+, and Cr3+. Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (carbohydrates, ketonic) and preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), B-II, Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And UV, IR Spectroscopy
	Tutorials:	NA	NA	NA
	Assignment	**Assignment-I**	B. Sc. (H) Chemistry, II year(SCH): Sem-IV B. Sc. (P) Life Science-II year (SLS-SEC): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY III Basic Analytical Chemistry
April	**Theory:**	Terpenes Occurrence, classification, Elucidation of stucture and synthesis of Citral.	B. Sc. (H) Chemistry, II year(SCH): Sem-IV	CHEMISTRY - C IX: ORGANIC CHEMISTRY III
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups (Unknown compounds given), Preparation of urea formaldehyde resin.	B. Sc. (H) Chemistry, III Year (TCH)-Sem-VI	CHEMISTRY - C XIV: Organic Chemistry V

		Separation of mixtures by chromatography: Measure the Rf values of each. Paper chromatographic separation of Ni2+, Co2+, and Mn2+. Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (amide, nitro, amines) preparation of one derivative.	B. Sc. (P) Life Science, III year (TLS), Sem-VI	DSE-Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And Uv,Ir Spectroscopy
	Tutorials:	NA	NA	NA
	Test			

Month		Topic	Course	Paper
April	**Theory:**	Structure and aromatic character of benzene. Preparation of benzene from phenol, benzoic acid, acetylene and benzene sulphonic acid. Reactions: electrophilic substitution reactions in benzene citing examples of nitration, halogenation, sulphonation and Friedel-Craft's alkylation and acylation with emphasis on carbocationic rearrangement, side chain oxidation of alkyl benzenes. Williamson's ether synthesis, Cleavage of ethers with HI, Aldehydes and ketones (Aliphatic and Aromatic): Preparation: from acid chlorides and from nitriles.	B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Determination of heat capacity of calorimeter and Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Oxime of cycloxanone preparation.	B. Sc. (P) Life Science, I year (FLS), Sem- II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals)
	Practicals:			
	Practicals:			
	Tutorials:	NA	NA	NA
May	**Theory:**	Reactions: Nucleophilic addition, nucleophilic addition – elimination reaction including reaction with HCN, ROH, NaHSO3, NH2-G derivatives. Iodoform test, Aldol	B. Sc. (P) Life Science-B, I year (FLS), Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

		Condensation, Cannizzaro's reaction, Wittig Reaction. Benzoin condensation. Clemmensen reduction, Wolff Kishner reduction, Meerwein-Pondorff Verley reduction. Structure and classification of alcohols as 1^0, 2^0 & 3^0. Preparation: Methods of preparation of 1^0, 2^0 & 3^0 by using Grignard reagent, ester hydrolysis and reduction of aldehydes, ketones, carboxylic acids and esters. Reactions: Acidic character of alcohols and reaction with sodium, with HX (Lucas Test), esterification,		
	Practicals:	Determination of integral enthalpy of solution of salts (KNO3, NH4Cl). Benzoylation of amines/phenols	B. Sc. (P) Life Science-B, I year (FLS), Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals)
	Tutorials:	NA	NA	NA
June	**Theory:**	Oxidation (with PCC, alkaline KMnO4, acidic K2Cr2O7 and conc. HNO3), Oppeneauer Oxidation. B) Diols (upto 6 Carbons): Oxidation and Pinacol-Pinacolone rearrangement. Phenols: acidity of phenols and factors affecting their acidity. Preparation: Methods of preparation from cumene, diazonium salts and benzene sulphonic acid. Reactions: Directive influence of OH group and Electrophilic substitution reactions, viz. nitration, halogenation, sulphonation, Reimer-Tiemann reaction, Gattermann–Koch reaction, Houben-Hoesch condensation, reaction due to OH group: Schotten-Baumann reaction	B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Determination of enthalpy of hydration of copper sulphate. 2,4-dinitrophenylhydrazone of aldehydes and ketones Semicarbazone of aldehydes and ketones	B. Sc. (P) Life Science-B, I year (FLS), Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals)

	Tutorials:	NA	NA	NA
	Assignment	**Assignment-I**	B. Sc. (P) Life Science-B, I year (FLS)_Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
July	**Theory:**	Structure of haloalkanes Preparationand alkenes with mechanisms. Reactions: Nucleophilic substitution reactions with mechanism and their types (SN1, SN2 and SNi), competition with elimination reactions (elimination vs substitution), nucleophilic substitution reactions with specific examples from: hydrolysis, nitrite & nitro formation, nitrile & isonitrile formation. Haloarenes: Structure and resonance Preparation: Reaction: Nucleophilic aromatic substitution by OH group (Bimolecular Displacement Mechanism), Effect of nitro substituent on reactivity of haloarenes, Reaction with strong bases NaNH2/NH3 (elimination addition mechanism involving benzyne intermediate), relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides.	B. Sc. (P) Life Science-B, I year (FLS)-Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Bromination of phenol/aniline	B. Sc. (P) Life Science-B, I year (FLS), Sem-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals)
	Tutorials:	NA	NA	NA
	Test			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. DEVENDRA KUMAR VERMA

Department: Chemistry **Semester: II/IV/VI**

Month		Topics	Course	Paper Code/Name
January (2/1/2021) (IV/VI)	**Theory**	Kinetic theory of the gas :- postulates of kinetic theory of gases and derivation of real gases, from ideal behavior, compressibility factor, cause of deviation, Vander wall equation of state for real gases. Boyle temperatures, critical phenomenon, critical constants and their calculations. From vander walls equation, Andrew isothermal of CO2,	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
	Practicals	Section B: Physical Chemistry (I)Surface tension measurement (use of organic solvents excluded). a)Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		Section B: Physical Chemistry (I) Surface tension measurement (use of organic solvents excluded) a) Determination of the surface tension of a liquid or a dilute solution using a stalagmometer. b) Study of the variation of surface tension of a detergent solution with concentration.	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
	Tutorials			
February	**Theory:**	Maxwell bolt many distribution laws of molecular velocity and molecular energies (graphical representation) and their importance. Temperatures dependence of these distributions, most probable, average and root mean squire velocity, collision cross section, collision number, collision frequency,	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics

	Practicals:	b)Study of the variation of surface tension of a detergent solution with concentration. (II)Viscosity measurement (use of organic solvents excluded). a)Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer.	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		(II) Viscosity measurement (use of organic solvents excluded) a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald's viscometer. b) Study of the variation of viscosity of an aqueous solution with concentration of solute.	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
	Tutorials:			
March	**Theory:**	Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Chemical equilibrium :- free energy change in a chemical reaction. Thermodynamic derivation of law of chemical equilibrium. Distinction between G and G^{O}.	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
	Practicals:	b)Study of the variation of viscosity of an aqueous solution with concentration of solute. (III) Chemical Kinetics Study the kinetics of the following reactions. 1.Initial rate method: Iodide-persulphate reaction	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
April	**Theory:**	Surface tension and its determination using stalgamometer, viscosity of a liquid and determination of coefficient of viscosity of a liquid.	GE 4 Chemistry	Chemical energetic
		Chemical energetics review of Thermodynamics and laws of Thermodynamics. Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpy of formation, integral and differential enthalpy of solution.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1

	Practicals :	2. Integrated rate method: a.Acid hydrolysis of methyl acetate with hydrochloric acid. b.Saponification of ethyl acetate. c.Compare the strengths of HCl and H2SO4	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		b) Determination of the critical solution temperature and composition of the phenol water system and study of the effect of impurities on it. c) Study of the variation of mutual solubility temperature with concentration for the phenol water system and determination of the critical solubility temperature	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
May	**Theory**	Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variations of enthalpy of reaction with temperature - krchhoff's equation.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
JUNE	**Theory**	Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Statement of third law of Thermodynamics and calculation of absolute entropies of substance. Chemical equilibrium:- free energy change in a chemical reaction. Thermodynamic derivation of law of chemical equilibrium. Distinction between G and G^{O}.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1
JULY	**Theory**	Le Chatelier's principles. Relationships between Kp, Kc and Kx, for reaction involving ideal gases.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry 1

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Akanksha Gupta **Department: Chemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Transition Elements: General group trends with special reference to electronic configuration, colour, variable valency, magnetic properties (no temperature dependence), catalytic properties, and ability to form complexes. Latimer diagrams of Mn, Fe and Cu in acidic and basic media, differences between the first, second	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Optical methods of analysis: Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and selection rules, introduction of UV-Visible Spectrometry	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	DSE: Analytical Methods in Chemistry
		Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size,	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals	Inorganic Preparations: i. Tetraamminecopper (II) sulphate, ii. Acetylacetonate complexes of Cu^{2+}	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Preparation (i) tetraamminecopper (II) sulphate (ii) potassium trioxalatoferrate trihydrate	B.Sc. Life Sciences IIIrd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials			

FEBRUARY	**Theory:**	Chemistry of Cr, Mn, Fe and Co in various oxidation states with special reference to following compounds Potassium dichromate, potassium permanganate, potassium ferrocyanide, potassium ferricyanide, sodium nitroprusside	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Basic principles of instrumentation (choice of source, monochromator and detector) for single and double beam instrument; Transmittance. Absorbance and Beer-Lambert law Thermal methods of analysis: Theory of thermogravimetry (TG) and basic principle of instrumentation of thermal analyser	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	DSE: Analytical Methods in Chemistry
		ionization enthalpy, electronegativity (Pauling, Muliken, and Allred-Rochow scales). Allotropy in C, S, and P.	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals:	(iv) Potassium tri(oxalato)ferrate(III) Estimation of nickel (II) using Dimethylglyoxime (DMG).	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, alcoholic, ketonic, amides)	B.Sc. Life Sciences IIIrd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials:			
	<u>Assignment :</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		UV visible, Electroanalytical techniques	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	DSE: Analytical Methods in Chemistry

		Chemistry of s and p block elements	B.Sc. Generic Elective II[nd] Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
MARCH	**Theory:**	Lanthanoids and Actinoids electronic configuration, oxidation states, colour, spectral and magnetic properties. Lanthanoid contraction (causes and effects) separation of lanthanoids by ion exchange method. Inorganic Reaction Mechanism: Introduction to inorganic reaction mechanisms	B.Sc. (H) Chemistry II[nd] Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Separation techniques: Techniques for quantitative estimation of Ca and Mg from their mixture. Solvent extraction: Classification, principle and efficiency of the technique. Mechanism of extraction: extraction by solvation and chelation, Technique of extraction: batch, continuous and counter current extractions	B.Sc. (H) Chemistry III[rd] Year, Semester - VI	DSE: Analytical Methods in Chemistry
		Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group.	B.Sc. Life Sciences II[nd] Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals:	Estimation of copper as CuSCN Preparation of Tetraamminecarbonatocobalt (III) nitrate	B.Sc. (H) Chemistry II[nd] Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations Mixtures preferably contain one interfering anion	B.Sc. (H) Chemistry III[rd] Year, Semester - VI	INORGANIC CHEMISTRY IV

		Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, alcoholic, ketonic, amides, carbohydrates, nitro, amines, phenolic) and preparation of their derivatives	B.Sc. Life Sciences IIIrd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials:			
	Test	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Test	UV visible, thermal method of analysis and Qualitative and quantitative aspects of analysis	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	DSE: Analytical Methods in Chemistry
	Test	Chemistry of s and p block elements	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
APRIL	**Theory:**	Substitution reactions in square planar complexes, Trans- effect, theories of trans-effect. Thermodynamic and Kinetic stability	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
		Qualitative and quantitative aspects of solvent extraction: extraction of metal ions from aqueous solution, extraction of organic species from the aqueous and nonaqueous media.	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	DSE: Analytical Methods in Chemistry
		compounds of s- and p-block elements , diborane and concept of multicentre bonding	B.Sc. Generic Elective IInd Year, Semester - IV	Chemistry of *s*-and *p*-block elements, States of matter and Chemical Kinetics
	Practicals:	Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$.	B.Sc. (H) Chemistry IInd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry

		Mixtures preferably contain one interfering anion and combination of anions	B.Sc. (H) Chemistry IIIrd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, alcoholic, ketonic, amides, carbohydrates, nitro, amines, phenolic) and preparation of their derivatives Separation of mixtures by chromatography: Measure the R_f value in each case.Paper chromatographic separation of Ni^{2+} or Co^{2+}	B.Sc. Life Sciences IIIrd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials:			

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Komal Aggarwal **Department: Chemistry**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Electromagnetic radiations and their properties; double bond equivalence and hydrogen deficiency. UV-Visible spectroscopy (electronic spectroscopy): General electronic transitions, λ_{max} & ε_{max}, chromophores & auxochromes, bathochromic & hypsochromic shifts.	B.Sc.(P) Life Sciences IIIrd year, Semester-VI	**CHEMISTRY-DSE-12** Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practical	Systematic qualitative analysis of organic compounds possessing monofunctional groups.	B.Sc.(P) Life Sciences IIIrd year, Semester-VI	**CHEMISTRY-DSE-12** Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Practical	To calculate acidity in given sample of pesticide formulations as per BIS specifications. To calculate alkalinity in given sample of pesticide formulations as per BIS specifications.	B.Sc. (H) Chemistry IIndYear, Semester-IV	**CHEMISTRY-SEC-11** Pesticide Chemistry
	Tutorials			
FEBRUARY	**Theory**	Application of Woodward rules for calculation of λmax for the following systems: conjugated dienes - alicyclic, homoannular and heteroannular; α,β-unsaturated aldehydes and ketones, charge transfer complex. Infrared (IR) Spectroscopy: Infrared radiation and types of molecular vibrations, significance of functional group & fingerprint region.	B.Sc.(P) Life Sciences III year	CHEMISTRY-DSE-12

	Practical	Analysis of organic compound alcohols & phenols. Analysis of organic compound carboxylic acids. Analysis of organic compound carbonyl compounds.	B.Sc.(P) Life Sciences III year	CHEMISTRY-DSE-12
	Practical	To carryout market survey of potent pesticides with details as follows: To carryout market survey of potent botanical pesticides with details as follows: a) Botanical name and family; b) Chemical name (active ingredient) and structure of active ingredient; c) Type of formulation available and Manufacturer's name; d) Useful information on label of packaging regarding: Toxicity, LD50 ("Lethal Dose, 50%"), Side effects and Antidotes.	B.Sc. (H) Chemistry II Year, Semester-IV	CHEMISTRY-SEC-11 Pesticide Chemistry
	Tutorials:			
	Assignment:			
MARCH	**Theory:**	IR spectra of alkanes, alkenes, aromatic hydrocarbons (effect of conjugation and resonance on IR absorptions), simple alcohols (inter and intramolecular hydrogen bonding and IR absorptions), phenol, carbonyl compounds, carboxylic acids and their derivatives (effect of substitution on >C=O stretching absorptions).	B.Sc.(P) Life Science III year	CHEMISTRY-DSE-12
	Practical	Organic Analysis Quiz Analysis of carbohydrates and Nitrogen containing functional groups	B.Sc.(P) Life Science III year	CHEMISTRY-DSE-12

	Practical	Pesticides Quiz 1 Preparation of simple Organochlorine pesticides. Pesticides Quiz 2	B.Sc. (H) Chemistry II Year, Semester-IV	CHEMISTRY-SEC-11 Pesticide Chemistry
	Tutorials:			
	Assign ment:	Active methylene compounds and UV-Visible and infrared spectroscopy	B.Sc.(P) Life Sciences III year, Semester-VI	**CHEMISTRY-DSE-12** Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
APRIL	**Theory**	Preparation and Properties of the following compounds with reference to electrophilic and nucleophilic substitution: furan, and thiophene.	B.Sc.(P) Life Science III year	CHEMISTRY-DSE-12
	Theory	Hybridisation: Shapes of molecules. Electronic displacements and their applications: Inductive, electromeric, resonance and mesomeric effects and hyperconjugation. Concept of dipole moment, acidity and basicity and pKa values. Carbon-Carbon sigma bonds (Alkanes and Cycloalkanes) General methods of preparation-Wurtz and Wurtz Fittig reaction, Corey House synthesis, physical and chemical properties of alkanes, Free radical substitutions; Halogenation, concept of relative reactivity v/s selectivity.	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Practical	**MCQ: Functional group analysis**	B.Sc.(P) Life Sciences III year, Semester-VI	CHEMISTRY-DSE-12
	Practical	Preparation of Neem based botanical pesticides. Discussion Class.	B.Sc. (H) Chemistry II Year, Semester-IV	CHEMISTRY-SEC-11 Pesticide Chemistry

	Practical	Bromination of phenol/aniline (Recrystallization, determination of melting point and calculation of quantitative yields to be done) Determination of heat capacity of calorimeter. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc.(P) Life Sciences I year, Semester-II	CHEMISTRY –CORE PAPER 2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Test:	Active methylene compounds and UV-Visible and infrared spectroscopy	B.Sc.(P) Life Sciences III year, Semester-VI	**CHEMISTRY-DSE-12** Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
MAY	**Theory**	Stereochemistry Stereoisomerism: Optical activity and optical isomerism, asymmetry, chirality, enantiomers, diastereomers. specific rotation; Configuration and projection formulae: Newmann, Sawhorse, Fischer and their interconversion. Chirality in molecules with one and two stereocentres; meso configuration. Racemic mixture and their resolution. Relative and absolute configuration: D/L and R/S designations. Geometrical isomerism: cis-trans, syn-anti and E/Z notations using CIP rules. Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and butane).General molecular formulae of cycloalkanes and relative stability, Baeyer strain theory.	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Practical	Benzoylation of amines/phenols. Oxime of aldehydes and ketones. Determination of integral enthalpy of solution of salts (KNO3, NH4Cl).	B.Sc.(P) Life Sciences I year, Semester-II	CHEMISTRY –CORE PAPER 2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

	Assignment	Basics of Organic Chemistry, Stereochemistry	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
JUNE	**Theory**	Cyclohexane conformations with energy diagram, Axial and equatorial positions. Conformations of monosubstituted cyclohexanes. Carbon-Carbon pi Bonds (Alkenes and Alkynes) Structure and isomerism. General methods of preparation, physical and chemical properties. Mechanism, of E1, E2, E1cb reactions, Saytzeff and Hoffmann eliminations, Electrophilic Additions, mechanism with suitable examples, (Markownikoff/Antimarkownikoff addition), syn and anti-addition; addition of H_2, X_2, oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, Diels Alder reaction, 1,2- and 1,4-addition reactions in conjugated dienes. Mechanism of allylic and benzylic bromination in propene, 1-butene, toluene,ethyl benzene.	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Practical	2,4-dinitrophenylhydrazone of aldehydes and ketones. Organic MCQ Quiz Determination of enthalpy of hydration of copper sulphate. Physical MCQ Quiz Semicarbazone of aldehydes and ketones	B.Sc.(P) Life Sciences I year, Semester-II	CHEMISTRY –CORE PAPER 2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Assignment	Stereochemistry Part 2	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons

JULY	**Theory**	Reactions of alkynes; acidity, electrophilic and nucleophilic additions, hydration to form carbonylcompounds, Alkylation of terminal alkynes. Question Papers discussion	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons
	Practical	Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values.	B.Sc.(P) Life Sciences I year, Semester-II	CHEMISTRY –CORE PAPER 2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Assignment	Alkenes and Alkynes	B.Sc. (H) Chemistry I Year, Semester-II	CHEMISTRY – CIII: ORGANIC CHEMISTRY – I Basics and Hydrocarbons

SEMESTER WISE TEACHING PLAN

Academic year 2020-2021 (Even Semester)

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Balendra **Department: Chemistry**

Semester: II/IV/VI

Month		Topic	Course	Paper Code/Name
January	**Theory**	Definition of pure water, sources responsible for contaminating water,	B.Sc.(P) Life Sciences Sem-IV	CHEMISTRY –SEC-2 Basic Analytical Chemistry
	Practical	(ii) Introductory class (ii) Market survey of pesticides	B.Sc.(H) Chemistry Sem-IV	SEC-11: PESTICIDE CHEMISTRY PRACTICALS
February	**Theory**	Sampling methods, water purification methods.	B.Sc.(P) Life Sciences Sem-IV	CHEMISTRY –SEC-2 Basic Analytical Chemistry
	Practical	(i) Preparation of Simple Organochlorine Pesticide (ii) Acidity determination of given pesticide sample using BIS method (iii) Alkalinity determination of given pesticide sample using BIS method	B.Sc. (H) Chemistry Sem-IV	SEC-11: PESTICIDE CHEMISTRY PRACTICALS
	Assessment	**Assignment-1**	B.Sc.(P) Life Sciences Sem-IV	BAC
March	**Practical**	(i) Market Survey on Potent Pesticides (ii) Active ingredient in given sample of pesticide formulations as per BIS specifications (iii) Extraction of Neem oil (i) Detection of extra elements (ii) Separation of mixtures of two ions by paper chromatography and measurement of Rf value in each case:	B.Sc.(H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-VI	SEC-11: PESTICIDE CHEMISTRY PRACTICALS CHEMISTRY DSE-12: Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy

April	**Theory:** .	Structure and aromatic character of benzene. Preparation**:** methods of preparation of benzene from phenol, benzoic acid, acetylene and benzene sulphonic acid. Homolytic and heterolytic fissions with suitable examples. Types, shape and relative stability of carbocations, carbanions, carbenes and free radicals. Structure and aromatic character of benzene.	GE-II B.Sc.(H) Chemistry Sem-II B.Sc.(P) Life Sciences Sem-II	CHEMISTRY–GE-2 Chemical Energetics, Equilibria and Functional Group Organic ORGANIC CHEMISTRY – I, Basics and Hydrocarbons CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	(i) Bromination of aniline (ii) Bromination of acetanilide (iii) Recrystallization from water (i) Market Survey on Potent Pesticides (ii) DDT Synthesis Organic preparation: (i) Systematic qualitative analysis of amide, amines, halo-hydrocarbons and carbohydrates (ii) Preparation of tetraamminecopper (II) sulphate potassium trioxalatoferrate (i) Bromination of aniline (ii) Benzoylation of aniline and B-naphthol (iii) Semicarbazone of carbonyl compound	B.Sc.(H) Chemistry Sem-II B.Sc.(H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-VI GE-II	ORGANIC CHEMISTRY – I, Basics and Hydrocarbons SEC-11: PESTICIDE CHEMISTRY PRACTICALS CHEMISTRY DSE-12: Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
May	**Theory:**	Reaction of alkyl halides (SN1, SN2 and SNi), Nucleophile substitution reaction: Hydrolysis, nitrite and nitro formation, nitrile, isonitrile and Williamson ether synthesis Weaker forces like van der Waals forces and hydrogen bonding Electrophiles and nucleophiles, addition, elimination and substitution reactions Reaction of alkyl halides Nucleophile substitution reaction: Hydrolysis, nitrite and nitro	GE-II B.Sc.(H) Chemistry Sem-II B.Sc.(P) Life Sciences Sem-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1 ORGANIC CHEMISTRY – I, Basics and Hydrocarbons CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1

		formation, nitrile, isonitrile and Williamson ether synthesis		
	Practicals:	(i) Recrystallization from alcohol and alcohol-water mixture (ii) Melting Point Determination-Files (i)To calculate alkalinity in given sample of pesticide formulations as per BIS specifications. (i) Compare the conductance of the complexes with that of M/1000 solution of NaCl, MgCl2 (ii) Systematic qualitative analysis of organic compounds possessing monofunctional groups Thermochemistry: (1). Determination of heat capacity of calorimeter using different volumes. (2). Determination of enthalpy of neutralization of' hydrochloric acid with sodium hydroxide. (3). Determination of integral enthalpy of solution of salts (KNO3, NH4 C1). Organic preparation: (i) Oxime formation of cyclohexanone	B.Sc.(H) Chemistry Sem-II B.Sc.(H) Chemistry Sem-IV B. Sc.(P) Life Sciences Sem-VI GE-II	ORGANIC CHEMISTRY – I, Basics and Hydrocarbons SEC-11: PESTICIDE CHEMISTRY PRACTICALS CHEMISTRY DSE-12: Organometallics, Bioinorganic chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1
	Tutorials:	Assessment-1	B.Sc.(H) Chemistry Sem-II	Basics and Hydrocarbons
June	**Theory:**			
		Haloarenes: their structure, preparation, sandmeyer and gattermann reactions) Nucleophilic aromatic substitution by OH, effect of nitrogroup. Concept of Aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions with suitable examples and heterocyclic compounds with suitable examples. Haloarenes: their structure, preparation, sandmeyer and gattermann reactions) Nucleophilic aromatic substitution by OH, effect of nitro group.	GE-II B.Sc.(H) Chemistry Sem-II B.Sc. (P) Life Sciences Sem-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1 ORGANIC CHEMISTRY – I, Basics and Hydrocarbons CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-1

	Practicals:	(i) Synthesis of m-dinitrobenzene (ii) Determination of Mixed Melting Point (iii) Calibration of Thermometer Determination of enthalpy of hydration of copper sulphate. Preparation of buffer solutions: (i)Sodium acetate-acetic acid (ii)Ammonium chloride-ammonium hydroxide Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Organic preparation: (i) 2,4 DNP derivative preparation of Benzaldehyde	B.Sc.(H) Chemistry Sem-II GE II:	ORGANIC CHEMISTRY – I, Basics and Hydrocarbons GE-II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:			
	Assessment	Assessment-2	B.Sc.(H) Chemistry Sem-II	Basics and Hydrocarbons
July	**Theory:**	Reaction with strong bases NaNH2/NH3 (eliminationaddition mechanism involving benzyne intermediate), relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism. Directing effects of groups in electrophilic substitution. Reaction with strong bases NaNH2/NH3 (eliminationaddition mechanism involving benzyne intermediate), relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides	GE-II B.Sc.(H) Chemistry Sem-II B.Sc. (P) Life Sciences Sem-II	GE-2: Chemical Energetics, Equilibria and Functional Group Organic Chemsirty-1 ORGANIC CHEMISTRY – I, Basics and Hydrocarbons CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-1
	Practicals:	(i) Circular Paper Chromatography (ii) Ascending Paper Chromatography (iii) o-and p-nitrophenol separation by TLC (iv) Boiling point determination **REVISION EXERCISES ALONG WITH VIVA**	B.Sc.(H) Chemistry Sem-II GE II:	ORGANIC CHEMISTRY – I, Basics and Hydrocarbons GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:			

SEMESTER WISE TEACHING
PLAN 2020-2021 (Even Sem)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Chandra Sekhar Tekuri

Department: Chemistry **Semester: II/VI**

Month		Topics	Course	Paper Code/Name
January	**Theory**	A general study including preparation and uses of the following; Hair dye, hair spray, shampoo, suntan lotions, face powder.	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Practicals	Preparation of talcum powder Preparation of liquid shampoo	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Practicals	Extraction of caffeine from tea leaves, Preparation of urea formaldehyde resin, Preparation of methyl orange dye	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
	Assignment	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
February	**Theory**	lipsticks, talcum powder, nail enamel, creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Practicals	Preparation of face cream Preparation of nail paint and remover Preparation of hair remover	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Practicals	Qualitative analysis of unknown organic compounds containing monofunctional groups	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
	Assignment :	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
March	**Theory**	Essential oils and their importance in cosmetic industries with reference to Eugenol, Geraniol, sandalwood oil	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Practicals	Preparation of powder shampoo	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes

	Practicals	Practiced qualitative analysis of unknown organic compounds containing monofunctional groups	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
April	**Assignment :**	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Theory	Eucalyptus, rose oil, 2-phenyl ethyl alchol, Jasmone, Civetone, Muscone.	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Theory	Structure and classification of alcohols as 1º, 2º & 3º. Preparation: Methods of preparation of 1º, 2º & 3º by using Grignard reagent, ester hydrolysis and reduction of aldehydes, ketones, carboxylic acids and esters. Wittig reaction. Meerwein-Pondorff Verley reduction.	GE II, Year I, Semester II	GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals	Preparation of enamels	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
	Practicals	(i)Practiced qualitative analysis of unknown organic compounds containing monofunctional groups. (ii)Mock Test	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	CHEMISTRY - C XIV: Organic Chemistry V
	Practicals	Organic Preparations (i) Bromination of acetanilide / aniline / (ii) Purification of organic compounds by crystallization using the following solvents: a. Water b. Alcohol c. Alcohol-Water	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY C-III: Organic Chemistry I
	Practicals	Determination of heat capacity of calorimeter and Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Oxime of cycloxanone preparation.	B. Sc. (P) Life Science-B, I year (FLS), B-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Assessment	TLS	B. Sc. (P) Life Sciences III Year, Semester VI	SEC: Chemistry of Cosmetics and Perfumes
May	**Theory**	Reactions:Acidic character of alcohols and reaction with sodium, with HX (Lucas Test), esterification, oxidation (with PCC, alkaline $KMnO_4$, acidic $K_2Cr_2O_7$ and conc. HNO_3), Oppeneauer Oxidation. Oxidation and Pinacol-Pinacolone rearrangement. Benzoin condensation Phenols: acidity of phenols and factors affecting their acidity. Preparation: Methods of preparation from cumene, diazonium salts and benzene sulphonic acid.	GE II, Year I, Semester II	GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

	Practicals	1. Calibration of a thermometer. 2. Determination of the melting points of unknown organic compounds (Kjeldahl method and electrically heated melting point apparatus) 3. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds 4. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method)	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY C-III: Organic Chemistry I
	Practicals	Determination of integral enthalpy of solution of salts (KNO_3, NH_4Cl). Benzoylation of amines/phenols	B. Sc. (P) Life Science-B, I year (FLS), B-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
June	**Theory**	Reactions: Directive influence of OH group and Electrophilic substitution reactions, viz. nitration, halogenation, sulphonation, Reimer-Tiemann reaction, Gattermann–Koch reaction, Houben-Hoesch condensation, reaction due to OH group: Schotten- Baumann reaction. Williamson's ether synthesis, Cleavage of ethers with HI.	GE II, Year I, Semester II	GE II: Chemical Energetics, Equilibria and Functional
	Practicals	1) Detection of extra elements 2). Chromatography a. Separation of a mixture of two amino acids by ascending and radial paper chromatography	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY C-III: Organic Chemistry I
	Practicals	Determination of enthalpy of hydration of copper sulphate. 2,4 dinitrophenylhydrazone of aldehydes and ketones Semicarbazone of aldehydes and ketones	B. Sc. (P) Life Science-B, I year (FLS), B-II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	<u>Assignment :</u>	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I	GE II, Year I, Semester II	GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
July	**Theory:**	Preparation: from acid chlorides and from nitriles. Reactions: Nucleophilic addition, nucleophilic addition –elimination reaction including reaction with HCN, ROH, NaHSO3, NH_2-G derivatives. Iodoform test, Aldol Condensation, Cannizzaro's reaction, Clemmensen reduction, Wolff Kishner reduction	GE II, Year I, Semester II	GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

	Practicals:	Chromatography 1 Separation of a mixture of two sugars by ascending paper chromatography. 2.Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC) 3.Mock Practical exam	B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY C-III: Organic Chemistry I
	Practicals:	Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values. Bromination of phenol/aniline	B. Sc. (P) Life Science-B, I year (FLS), B-III	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

SEMESTER WISE TEACHING PLAN
TEACHING PLAN 2020-2021(Even Semester)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Manoj Trivedi **Department: Chemistry**

Semester: I/IV

Month		Topics	Course	Paper Code/Name
January	Theory	Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Muliken, and Allred-Rochow scales). Allotropy in C, S, and P. Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship	B.Sc. Life Science, II Year, IV Semester **(Batch 2)**	Chemistry-Core Paper-4
	Practicals	Inorganic Preparations: Tetraamminecopper (II) sulphate, $[Cu(NH_3)_4]SO_4.H_2O$ Acetylacetonate complexes of Cu^{2+} Potassium tri(oxalato)ferrate(III)	B.Sc.(H), II Year, IV Semester **(Batch 1 and 2)**	Chemistry -C VIII: Inorganic Chemistry III
		Surface tension measurement (use of organic solvents excluded): Determination of the surface tension of a liquid or a dilute solution using a stalagmometer, Viscosity measurement (use of organic solvents excluded): a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer.	B.Sc. Life Science, II Year, IV Semester **(Batch 1)**	Chemistry-Core Paper-4
February	Theory	Anomalous behaviour of first member of each group., compounds of s- and p-block elements , diborane and concept of multicentre bonding. Structure, bonding and their important properties like oxidation/reduction, acidic/basic nature of the following compounds and their applications in industrial and environmental chemistry. Hydrides of nitrogen (NH_3, N_2H_4, N_3H, NH_2OH) Oxoacids of P, S and Cl, Halides and oxohalides: PCl_3, PCl_5, $SOCl_2$ and SO_2Cl_2	B.Sc. Life Science, II Year, IV Semester **(Batch 2)**	Chemistry-Core Paper-4
	Practicals	Gravimetric Analysis: Estimation of nickel (II) using Dimethylglyoxime (DMG). Estimation of copper as CuSCN	B.Sc.(H), II Year, IV Semester **(Batch 1 and 2)**	Chemistry -C VIII: Inorganic Chemistry III
		Study of the variation of viscosity of an aqueous solution with concentration of solute, Chemical Kinetics Study the kinetics of the following reactions by integrated rate method: a) Acid hydrolysis of methyl acetate with hydrochloric acid.	B.Sc. Life Science, II Year, IV Semester **(Batch 1)**	Chemistry-Core Paper-4

	Assignment		B.Sc. Life Science, II Year, IV Semester **(Batch 1 and 2)**	Chemistry-Core Paper-4
March	Theory	Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon as reducing agent.	B.Sc. Life Science, II Year, IV Semester **(Batch 2)**	Chemistry-Core Paper-4
	Practicals	Semi-micro qualitative analysis of mixtures. Gravimetric Analysis: Estimation of iron as Fe_2O_3 by precipitating iron as $Fe(OH)_3$. Estimation of Al(III) by precipitating with oxine and weighing as $Al(oxine)_3$ (aluminium oxinate). Compare the strength of HCl and H_2SO_4 by studying the kinetics of hydrolysis methyl acetate.	B.Sc. Life Science, II Year, IV Semester **(Batch 1)** B.Sc.(H), II Year, IV Semester **(Batch 1 and 2)** B.Sc. Life Science, II Year, IV Semester **(Batch 1)**	Chemistry-Core Paper-4 Chemistry -C VIII: Inorganic Chemistry III Chemistry-Core Paper-4
April	Theory	Hydrometallurgy with reference to cyanide process for silver and gold, Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn). Composition of soil, concept of pH and its measurement, complexometric titrations	B.Sc. Life Science, II Year, IV Semester **(Batch 2)** B.Sc. Life Science, II Year (SEC), IV Semester **(Batch 2)**	Chemistry-Core Paper-4 Chemistry-SEC-2
	Practicals	Properties of Complexes: Measurement of 10 Dq by spectrophotometric method Verification of spectrochemical series. Semi-micro qualitative analysis of mixtures.	B.Sc.(H), II Year, IV Semester **(Batch 1 and 2)** B.Sc. Life Science, II Year, IV Semester **(Batch 1)**	Chemistry -C VIII: Inorganic Chemistry III Chemistry-Core Paper-4
	Assignment		B.Sc. Life Science, II Year, IV Semester **(Batch 2)**	Chemistry-Core Paper-4
May	Theory	Electrolytic, oxidative refining, van Arkel-De Boer process, Mond's process and Zone Refining. Chelation, chelating agents, use of indicators.	B.Sc. Life Science, II Year, IV Semester **(Batch 2)** B.Sc. Life Science, II Year (SEC), IV Semester **(Batch 2)**	Chemistry-Core Paper-4 Chemistry-SEC-2
	Practicals	Properties of Complexes: Synthesis of ammine complexes of Ni(II) and its ligand exchange reactions (e.g. bidentate ligands like acetylacetone, DMG, glycine) by substitution method. Semi-micro qualitative analysis of mixtures.	B.Sc.(H), II Year, IV Semester **(Batch 1 and 2)** B.Sc. Life Science, II Year, IV Semester **(Batch 1)**	Chemistry -C VIII: Inorganic Chemistry III Chemistry-Core Paper-4
	Assignment		B.Sc.(H), II Year, IV Semester **(Batch 1 and 2)** B.Sc. Life Science, II Year, IV Semester **(Batch 2)**	Chemistry -C VIII: Inorganic Chemistry III Chemistry-Core Paper-4

			B.Sc. Life Science, II Year (SEC), IV Semester **(Batch 2)**	Chemistry-SEC-2

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Aditi Gupta **Department: Chemistry**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon as reducing agent.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Introduction to analytical chemistry and its interdisciplinary nature, Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Significant figures.	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry
	Practicals	Separation of mixtures by paper chromatography and reporting the Rf values: (i) Co2+ and Ni2+ (ii) Amino acids present in the given mixture	B.Sc. Chemistry (H)-Sem VI	DSE-4: Analytical Methods in Chemistry
		Separation of mixtures of two ions by paper chromatography and measurement of Rf value in each case: 1) (Fe3+, Al3+ and Cr3+) 2) (Ni2+, Co2+, Mn2+ and Zn2+)	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		Surface tension measurement: Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

FEBRUARY	**Theory:**	Hydrometallurgy with reference to cyanide process for silver and gold, Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn): electrolytic, oxidative refining, van Arkel-De Boer process, Mond's process and Zone Refining.	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Presentation of experimental data and results. Composition of soil, concept of pH and its measurement, complexometric titrations	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry

Practicals:	Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt (iii) Estimation of calcium and magnesium (iv) Qualitative detection of nitrate and phosphate	B.Sc. Chemistry (H)-Sem VI	DSE-4: Analytical Methods in Chemistry
	Preparation of any two of the following complexes and measurement of their conductivity: (i) tetraamminecopper (II) sulphate (ii) potassium trioxalatoferrate (III) trihydrate. Compare the conductance of the complexes with that of M/1000 solution of NaCl, $MgCl_2$ and $LiCl_3$.	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	1) Viscosity measurement (use of organic solvents excluded): a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer. b) Study of the variation of viscosity of an aqueous solution with concentration of solute. 2) Study the kinetics of the following reactions by integrated rate method: a) Acid hydrolysis of methyl acetate with hydrochloric acid.	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics

MARCH	**Theory:**	Periodicity in s- and p-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Muliken, and Allred-Rochow scales). Allotropy in C, S, and P. Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect,	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Chelation, chelating agents, use of indicators. Definition of pure water, sources responsible for contaminating water, water sampling methods	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry

	Practicals:	Solvent Extractions (i) To separate a mixture of Ni2+ & Fe2+ by complexation with DMG and extracting the Ni2+ DMG complex in chloroform, and determine its concentration by spectrophotometry. 2)Quiz	B.Sc. Chemistry (H)-Sem VI	DSE-4: Analytical Methods in Chemistry
		1) Detection of extra elements 2) Quiz	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
		1)Study the kinetics of the following reactions by integrated rate method: Compare the strength of HCl and H2SO4 by studying the kinetics of hydrolysis methyl acetate. 2) Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) – For anions 3) Quiz	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		1) Determination of heat capacity of calorimeter. 2) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.	B.Sc. Life Sciences – Sem II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	<u>Test</u>	Hydrometallurgy	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Accuracy, Precision, Significant figures, soil analysis	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry

APRIL	**Theory:**	Diagonal relationship and anomalous behaviour of first member of each group. ,compounds of s- and p-block elements , diborane and concept of multicentre bonding. Structure, bonding and their important properties like oxidation/reduction, acidic/basic nature of the following compounds and their applications in industrial and environmental chemistry. Hydrides of nitrogen (NH_3, N_2H_4, N_3H, NH_2OH)	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Water purification methods. Definition and general introduction on principles of chromatography. Paper chromatography, thin layer Chromatography.	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry

Practicals:	Spectrophotometry (i) Verification of Lambert-Beer's law and determination of concentration of a coloured species (CuSO4, KMnO4, CoCl2, CoSO4) (ii) Determination of concentration of coloured species via following methods; (a) Graphical method, (b) Epsilon method, (c) Ratio method, (iv) Standard addition method	B.Sc. Chemistry (H)-Sem VI	DSE-4: Analytical Methods in Chemistry
	1)Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation) 2) Identification of simple organic compounds containing the above functional groups by IR spectroscopy through examination of spectra (spectra to be provided).	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	Semi-micro qualitative analysis of mixtures using H2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) – For anions and cations	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	1) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. 2) Bromination of phenol 3) Bromination of aniline	B.Sc. Life Sciences – Sem II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

	Assignment:	Questions on hydrometallurgy and periodicity	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Tests of Significance, MS Excel plotting of graphs	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry

MAY	**Theory:**	Structure, bonding and their important properties like oxidation/reduction, acidic/basic nature of the following compounds and their applications in industrial and environmental chemistry: Oxoacids of P, S and Cl, Halides and oxohalides: PCl3, PCl5, SOCl2 and SO2Cl2. Practise questions, previous year question papers,	B.Sc. Life Sciences-Sem IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
		Column chromatography and ion-exchange chromatography. Practise questions, previous year question papers	B.Sc. Life Sciences-Sem IV	SEC 2: Basic Analytical Chemistry

Practicals:	Ion exchange: (i) Determination of exchange capacity of cation exchange resins and anion exchange resins. (ii) Separation of amino acids from organic acids by ion exchange chromatography. 2) Quiz 3) Mock Test	B.Sc. Chemistry (H)-Sem VI	DSE-4: Analytical Methods in Chemistry
	1) Systematic qualitative analysis of organic compounds possessing monofunctional groups: amide, amines, halo-hydrocarbons and carbohydrates (Including Derivative preparation) 2) Identification of simple organic compounds containing the above functional groups by IR spectroscopy through examination of spectra (spectra to be provided). carboxylic acids, esters, amines and amides 3) Quiz 4)Mock test	B.Sc. Life Sciences-Sem VI	DSE-12: Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy
	1) Semi-micro qualitative analysis of mixtures using H_2S or any other scheme- not more than four ionic species (two anions and two cations and excluding insoluble salts) – For anions and cations 2) Quiz 3) Mock test	GE-IV	Chemistry of s- and p-Block Elements, States of Matter and Chemical Kinetics
	1) Determination of integral enthalpy of solution of salt -KNO_3, 2) Determination of integral enthalpy of solution of salt -NH_4Cl 3) Benzoylation of amines/phenols	B.Sc. Life Sciences – Sem II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

	Test:	s- and p- block elements	B.Sc. Life Sciences- Sem IV	Chemistry of s- and p- Block Elements, States of Matter and Chemical Kinetics
		Analysis of water and chromatography	B.Sc. Life Sciences- Sem IV	SEC 2: Basic Analytical Chemistry
JUNE	**Theory:**	NA		
	Practicals:	1) Determination of enthalpy of hydration of copper sulphate. 2) Oxime of aldehydes and ketones 3) 2,4-dinitrophenylhydrazone of aldehydes and ketones 4) Quiz	B.Sc. Life Sciences – Sem II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
JULY	**Theroy:**	NA		
	Practicals:	1) Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values. 2) Semicarbazone of aldehydes and ketones 3) Quiz 4) Mock test	B.Sc. Life Sciences – Sem II	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Jan-May 2020-2021

Name of the Faculty: Dr. Sunita Jain

Department: Electronics **Semester: VI**

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	Introduction to EM waves, concept of spherical & plane waves, reflection and transmission, total internal reflection, origin of refractive index and dispersion. Interference, division of wave front, division of amplitude. Young's double slit experiment, Newton's ring, Michelson Interferometer, and thin film. Holograph	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI**:** To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating (Allotted To Different Groups) Sem IV Study of op-amp characteristics: CMRR and Slew rate. Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp. Designing of analog adder and subtractor circuit. Designing of an integrator using op-amp for a	B.Sc. (H)	CC-XIV Photonics Lab CC -VIII Op- amp & its applications Lab
FEBRUARY	**Theory**	Fresnel and Fraunhoffer diffraction. Diffraction by rectangular aperture, single slit, and double slit, diffraction grating and circular aperture. Resolving and dispersive power of grating. Resolving power of telescope and microscope. Concept of Polarization. Linear circular and elliptical polarization, Malus Law, Double refraction, half and quarter wave plate.	B.Sc. (H)	CC-XIV Photonics

	Practical	Sem VI**:** To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating (Allotted To Different Groups) Sem IV: Designing of a differentiator of given specification using op-amp & its frequency response, First order Low pass filter& High pass filter,	B.Sc. (H)	CC-XIV Photonics Lab CC-VIII Op- amp & its applications Lab
	Assignment	Questions based on interference, diffraction and Polarization.	B.Sc. (H)	CC-XIV Photonics
MARCH	**Theory**	Liquid crystal display. Interaction of radiation and matter, Einstein coefficients, Condition for amplification, laser cavity, threshold for laser oscillation, line shape function. The semiconductor injection laser diode. LED, photodiodes and photodetectors. Quantum efficiency and responsivity	B.Sc. (H)	CC-XIV Photonics
	Practical	Sem VI**:** To determine the specific rotation of sugar solution using polarimeter. Characteristics of LEDs and Photodetector and Photodiode. Sem IV: 555 Monostable & Astable multivibrator, RC phase shift oscillator, Fixed power supply	B.Sc. (H)	CC-XIV Photonics Lab CC-VIII Op- amp & its applications Lab
	Mid-Term Test	Questions based on interference, diffraction and polarization		
APRIL	**Theory**	T.E. and T.M. modes in symmetric slab waveguide. Wave propagation and concept of linearly polarized waves inside dielectric waveguide. Group velocity and dispersion relation. Single mode and multimode fiber. Dispersion and attenuation in optical fiber.	B.Sc. (H)	CC-XIV Photonics

	Practical	Sem VI**:** Diffraction experiments using a laser. Single slit, double slit diffraction grating and circular aperture Sem IV: Designing of a differentiator of given specification using op-amp & its frequency response, First order Low pass filter& High pass filter, 555 Monostable & Astable multivibrator, RC phase shift oscillator, Fixed power supply	B.Sc. (H)	CC-XIV Photonics Lab CC-VIII Op- amp & its applications Lab

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SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

January to April, 2021

Name of the Faculty: Dr.Neeru Kumar

Department: Electronics

Semester: Six

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Introduction: Block diagram of an electronic communication system, electromagnetic spectrum-band designations and applications, need for modulation, concept of channels and base-band signals. Amplitude modulation: Basics of Amplitude Modulation, generation of AM (balanced modulator, collector modulator), Amplitude Demodulation (diode detector), Double side band suppressed carrier, DSBSC generation (balanced modulator), Single side band suppressed carrier, SSBSC generation (filter method, phase cancellation method, Weaver's method),).	**B.Sc. Electronics**	**CC XIII/Communication Electronics**
	Practicals:	**Sem VI:** 1.Study of Amplitude Modulation 2. Study of Amplitude Demodulation **Sem VI:** 1.Familiarization of the electrical machine laboratory apparatus 2. To study the load characteristics of DC Shunt Generator.		**CC XIII**/Communication Electronics **DSE** Electrical Machines

	Tutorials:			
Feburary	**Theory:**	Other forms of AM (Pilot Carrier Modulation, Vestigial Side Band modulation, Independent Side Band Modulation). Block diagram of AM Transmitter and Receiver Angle modulation: Frequency and Phase modulation, modulation index and frequency spectrum, equivalence between FM and PM, Generation of FM (direct and indirect methods), FM detector (PLL). Block diagram of FM Transmitter and Receiver Comparison between AM, FM and PM.	**B.Sc. Electronics**	**CC XIII/Communication Electronics**
	Practicals:	**Sem VI:** 1. Study of Frequency Modulation 2.Study of Frequency Demodulation 3. AM Transmitter/Receiver **Sem VI:** 1. To study Magnetisation Characteristics of DC shunt generators. 2. Speed Control of DC motor by field resistance control 3. Speed Control of DC motor by Armature Resistance Control		**CC XIII**/Communication Electronics **DSE** Electrical Machines
	Tutorials:			
	Assignment			

March	**Theory:**	Pulse Analog Modulation: Sampling theorem, Pulse Amplitude Modulation (PAM), Pulse Width Modulation (PWM) and Pulse Position Modulation (PPM). Generation and detection of PAM, PWM, PPM. Concept of Noise: External noise, internal noise, signal to noise ratio, noise factor, noise temperature, Friis formula	**B.Sc. Electronics**	**CC XIII/Communication Electronics**
	Practicals:	**Sem VI:** 1 Study of Pulse Amplitude Modulation 2.Study of Pulse Width Modulation 3. Study of Pulse Position Modulation **Sem VI:** 1. Determination of Transformer equivalent circuit from Open Circuit Test. 2.Determination of Transformer equivalent circuit from Short Circuit Test		**CC XIII**/Communication Electronics **DSE** Electrical Machines
	Tutorials:			
	Mid Term Test			
April	**Theory**	Pulse Code Modulation: Need for digital transmission, Quantizing, Uniform and Nonuniform Quantization, Quantization Noise, Companding, Coding, Digital Formats. Decoding, Regeneration, Transmission noise and Bit Error Rate. Differential Pulse Code Modulation, Delta Modulation, Quantization noise, Adaptive Delta Modulation.	**B.Sc. Electronics**	**CC XIII/Communication Electronics**

	Practicals:	**Sem VI:** 1. Study of Pulse Code Modulation 2. Study of Delta Modulation 3. Study of Adaptive Delta Modulation **Sem VI:** 1. Speed control of slip-ring Induction Motor. 2. To perform speed control of DC motor by using Ward-Leonard Method of speed control		**CC XIII**/Communication Electronics **DSE** Electrical Machines
	Tutorials:			

SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Academic Session 2020-2021 (Even Semester)

Name of the Faculty : Dr Nutan Joshi
Department : Electronics

Semester: Theory : B.Sc(H) Electronics, Sem IV

Practical : B.Sc(H) Electronics, Sem IV
B.Sc(H) Electronics, Sem VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Basic Operational Amplifier: Concept of differential amplifiers (Dual input balanced and unbalanced output), constant current bias, current mirror, cascaded differential amplifier stages with concept of level translator, block diagram of an operational amplifier (IC 741) Op-Amp parameters: input offset voltage, input offset current, input bias current, differential input resistance, input capacitance, offset voltage adjustment range, input voltage range, common mode rejection ratio, slew rate, supply voltage rejection ratio.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Study of op-amp characteristics: CMRR and Slew rate. Designing of an amplifier of given gain for an inverting and non-inverting configuration using an opamp. Designing of analog adder and subtractor circuit. Designing of an integrator using op-amp for a given specification and study its frequency response. Sem VI: To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating (Allotted To Different Groups)	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem VI	Core-Course-VIII/ Operational Amplifiers and Applications Lab CC-XIV Photonics Lab
FEBRUARY	**Theory**	Op-Amp Circuits: Open and closed loop configuration, Frequency response of an op-amp in open loop and closed loop configurations, Inverting, Non-inverting, Summing and difference amplifier, Integrator,	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications

		Differentiator, Voltage to current converter, Current to voltage converter. Comparators: Basic comparator, Level detector, Voltage limiters, Schmitt Trigger.		
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series Sem VI**:** To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem VI	Core-Course-VIII/ Operational Amplifiers and Applications Lab CC-XIV Photonics Lab
	Assignment	As per the syllabus covered		
MARCH	**Theory**	Signal generators: Phase shift oscillator, Wein bridge oscillator, Square wave generator, triangle wave generator, saw tooth wave generator, and Voltage controlled oscillator(IC 566). Multivibrators (IC 555): Block diagram, Astable and monostable multivibrator circuit, Applications of Monostable and Astable multivibrators. Phase locked loops (PLL): Block diagram, phase detectors,	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series Sem VI**:**	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab

		To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. To determine the resolving power and Dispersive power of Diffraction Grating To determine the specific rotation of sugar solution using polarimeter. Characteristics of LEDs and Photodetector and Photodiode.	B.Sc.(Hons) Electronics, Sem VI	CC-XIV Photonics Lab
APRIL	Theory	IC565. Fixed and variable IC regulators: IC 78xx and IC 79xx -concepts only, IC LM317- output voltage equation Signal Conditioning circuits: Sample and hold systems, Active filters: First order low pass and high pass butterworth filter, Second order filters, Band pass filter, Band reject filter, All pass filter, Log and antilog amplifiers.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications
	Practical	Designing of a differentiator using op-amp for a given specification and study its frequency response. Designing of a First Order Low-pass filter using op-amp. Designing of a First Order High-pass filter using op-amp Designing of a RC Phase Shift Oscillator using op-amp. Study of IC 555 as an astable multivibrator. Study of IC 555 as monostable multivibrator. Designing of Fixed voltage power supply using IC regulators using 78 series and 79 series Sem VI**:** To verify the law of Malus for plane polarized light To determine wavelength of sodium light using Newton's Rings. To determine wavelength of sodium light by diffraction grating. Diffraction experiments using a laser. Single slit, double slit diffraction grating and circular aperture **ASSIGNMENT TAKEN AND PRACTICAL TEST CONDUCTED**	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem VI	Core-Course-VIII/ Operational Amplifiers and Applications Lab CC-XIV Photonics Lab

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Shubhra Gupta **Department: Electronics**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Optical Communication:** Introduction of Optical Fiber, Types of Fiber, Guidance in Optical Fiber, Attenuation and Dispersion in Fiber, Optical Sources and Detectors, Block Diagram of optical communication system, optical power budgeting	BSc(hons) Electronics	DSE VI
	Practicals	Study of Optical Fiber Communication System Calculation of the transmission losses in an optical communication system.		
	Tutorials			
FEBRUARY	**Theory:**	**Cellular Communication:** Concept of cellular mobile communication – cell and cell splitting, frequency bands used in cellular communication, absolute RF channel numbers (ARFCN), frequency reuse, roaming and hand off, authentication of the SIM card of the subscribers, IMEI number, concept of data encryption, architecture (block diagram) of cellular mobile communication network, CDMA technology, CDMA overview, simplified block diagram of cellular phone handset, Comparative study of GSM and CDMA, 2G, 3G and 4G concepts.	BSc(hons) Electronics	DSE VI

	Practicals:	Study of cellular communication systems, frequency reuse, sectoring and handoffs		
	Tutorials:			
	Assignment :	Based on optical and cellular communications		
MARCH	**Theory:**	**Satellite communication:** Introduction, need, satellite orbits, advantages and disadvantages of geostationary satellites. Satellite visibility, satellite system – space segment, block diagrams of satellite sub systems, up link, down link, cross link, transponders (C- Band), effect of solar eclipse, path loss, ground station, simplified block diagram of earth station. Satellite access, TDMA, FDMA, CDMA concepts, comparison of TDMA and FDMA, Satellite antenna (parabolic dish antenna), GPS-services like SPS & PPS. **Local area networks (LAN):** Primary characteristics of Ethernet-mobile IP, OSI model, wireless LAN requirements-concept of Bluetooth, Wi-Fi and WiMAX.	BSc(hons) Electronics	DSE VI
	Practicals:	Study of sectoring concept in cellular communication systems and handoffs		
	Tutorials:			
	Test	Based on optical, cellular and satellite communications		

APRIL	**Theory:**	**Modern Communication Systems :** DPCM,DM,ADM. Binary Line Coding Technique, Multi level coding, QAM (Modulation and Demodulation) **Semiconductor Basics:** Introduction to Semiconductor Materials, Crystal Structure, Planes and Miller Indices, Energy Band in Solids, Concept of Effective Mass, Density of States, Carrier Concentration at Normal Equilibrium in Intrinsic Semiconductors, Derivation of Fermi Level for Intrinsic & Extrinsic Semiconductors, Donors, Acceptors, Dependence of Fermi Level on Temperature and Doping Concentration, Temperature Dependence of Carrier Concentrations. Carrier Transport Phenomena: Carrier Drift, Mobility, Resistivity, Hall Effect, Diffusion Process, Einstein Relation, Current Density Equation, Carrier Injection, Generation And Recombination Processes, Continuity Equation.	BSc(hons) Electronics BSc(hons) Electronics	DSE VI CC III
	Practicals:	To study DPCM,DM,ADM, line coding. Study of 16 QAM modulation and Detection with generation of Constellation Diagram		
	Tutorials:			
MAY	**Theory:**	Formation of Depletion Layer, Space Charge at a Junction Assignment on Unit 1		
	Practicals:			
	Tutorials:			

JUNE	Theory:	**Bipolar Junction Transistors (BJT):** PNP and NPN Transistors, Basic Transistor Action, Emitter Efficiency, Base Transport Factor, Current Gain, Energy Band Diagram of Transistor in Thermal Equilibrium, Quantitative Analysis of Static Characteristics		
	Practicals:			
	Tutorials:			
JULY	Theory:	Base-Width Modulation, Modes of operation, Input and Output Characteristics of CB, CE and CC Configurations. Metal Semiconductor Junctions: Ohmic and Rectifying Contacts.		
	Practicals:			
	Tutorials:			

SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2020-2021 (Even Semester)

Name of the Faculty : Mr Hari Singh
Department : Electronics

Semester: Theory : B.Sc (H) Electronics, Semester II

Practical : B.Sc (H) Electronics, Semester II
B.Sc (H) Electronics, Semester VI

Month		Topics	Course	Paper Code/ Name
Jan	**Practical**	▪ Familiarization of the electrical machine laboratory apparatus ▪ Study of characteristics of DC Series motor. ▪ Study of characteristics of DC Shunt motor.	B.Sc.(Hons) Electronics, Semester VI	Discipline-Specific-Elective-Course-IV/ Communication Electronics
Feb	**Practical**	▪ Study of characteristics of single phase induction motor. ▪ Study of characteristics of three phase induction motor. ▪ Study of Open Circuit Test on single phase transformer.	B.Sc.(Hons) Electronics, Semester VI	Discipline-Specific-Elective-Course-IV/ Communication Electronics
Mar	**Practical**	▪ Study of Short Circuit Test on single phase transformer ▪ Study of characteristics of DC Series motor. .	B.Sc.(Hons) Electronics, Semester VI	Discipline-Specific-Elective-Course-IV/ Communication Electronics
Apr	**Theory**	Electric and Magnetic Properties: Conductivity of metals, Ohm's Law, relaxation time, collision time and mean free path, electron scattering and resistivity of metals, heat developed in current carrying conductor, Superconductivity. Classification of Magnetic Materials, Origin of Magnetic moment,	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	▪ Study of characteristics of DC Shunt motor. ▪ Study of control of DC motor using SCR.	B.Sc.(Hons) Electronics, Semester VI	Discipline-Specific-Elective-Course-IV/ Communication Electronics
		▪ To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths ▪ To measure the resistivity of a Ge crystal with temperature by Four–Probe method from room temperature to 200 ^{0}C. ▪ To determine study the variation of Thermo-emf of a Thermocouple with difference of temperature of its two junctions using a Null Method. And also calibrate the Thermocouple in a specified temperature range.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
May	**Theory**	Origin of dia, para, ferro and antiferro magnetism and their comparison, Ferrimagnetic materials, Saturation Magnetisation and Curie temperature, Magnetic domains, Concepts of Giant Magnetic Resistance (GMR), Magnetic recording.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics

		Mechanical Properties of Materials: Elastic and Plastic Deformations, Hooke's Law, Elastic Moduli, Brittle, and Ductile Materials, Tensile Strength, Theoretical and Critical Shear Stress of Crystals, Strengthening Mechanisms, Hardness, Creep, Fatigue, Fracture.		
	Practical	✦ Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method) ✦ To determine Young's modulus of a wire by optical lever method. ✦ To determine the value of Boltzmann Constant by studying forward characteristics of diode.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
	Assignment	As per the syllabus covered		
Jun	**Theory**	Thermal Properties: Brief Introduction to Laws of Thermodynamics, Concept of Entropy, Concept of Phonons. Heat Capacity, Debye's Law, Lattice Specific Heat, Electronic Specific Heat, Specific Heat Capacity for Si and GaAs, Thermal Conductivity, Thermoelectricity, Seebeck Effect, Thomson Effect, Peltier Effect Quantum Physics: Inadequacies of Classical physics. Compton's effect, Photo-electric Effect, Wave-particle duality, De Broglie waves.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	✦ To determine the modulus of rigidity of a wire by Maxwell's needle. ✦ To determine the elastic constants of a wire by Searle's method.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
	Mid Term Test	As per the syllabus covered		
Jul	**Theory**	Basic postulates and formalism of quantum mechanics: probabilistic interpretation of waves, conditions for physical acceptability of wave functions.Schrodinger wave equation for a free particle and in a force field (1 dimension), Boundary and continuity conditions. Operators in Quantum Mechanics, Conservation of probability, Time-dependent form, Linearity and superposition, Operators, Time independent one dimensional Schrodinger wave equation, Stationary states, Eigen-values and Eigen functions. Particle in a one-dimensional box, Extension to a three dimensional box, Potential barrier problems, phenomenon of tunneling. Kronig Penney Model and development of band structure. Spherically symmetric potentials, the Hydrogen-like atom problem.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	✦ To determine e/m of electron by Bar Magnet or by Magnetic Focusing. ✦ To determine the Coefficient of Thermal Conductivity of Cu by Searle"s Apparatus	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab

SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2020-2021 (Even Semester)

Name of the Faculty : Dr Neha Verma
Department : Electronics

Semester: Theory : B.Sc(H) Electronics, Sem IV (CBCS)

Practical : B.Sc(H) Electronics, Sem IV (CBCS)
B.Sc(H) Electronics, Sem II (CBCS)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Data types, Arrays, Operators, Flow control**: Branching, Looping. Classes, New Operator, Dot Operator, Method Declaration and Calling, Constructors, Inheritance, Super	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
	Practicals	The Java Environment, The Java Development Kit, The Java Virtual Machine 1. Introductory Programs: a. To print a phrase ―Hello World‖. b. To print details: Name, Course name and Semester, Roll No. and paper name. 2. Program on Integer Arithmetic operator: To simplify a given expression. (e=d*a/b+c) 3. Program on Arithmetic Operators using floating point arithmetic (perform +,-,*,/, and %). 4. Program on Arithmetic Operators using Integer arithmetic (perform +,-,*,/, and%). 5. Program on Addition of two numbers (using double type), Subtraction of two numbers (using double type), Multiplication of two numbers (using int type), Division of two numbers (using double type), and Modulo (using double type) using casting. 6. Use of operators	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
FEBRUARY	**Theory**	Method Overriding Final, Finalize, Static, Package and Import Statement, Interface and Implements	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
	Practical	8. Program to understand the difference between prefix and postfix: to increment sum and number and display old and new values both. 9. Swapping of two numbers without using third variable. 10. Program on importing math library and using various functions available in that library. (math.sqrt, math.abs, math.pow, math.min, math.max, math.log) 11. Determine largest of three numbers using nested if-else. 12. Find the average of three subjects and grade the students according to their average marks using else-if ladder. 13. Sum of squares of numbers from 1 to 10 numbers using while loop	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
	Assignment	As per the syllabus covered		

MARCH	**Theory**	**Exception Handling:** Exception Types, Uncaught and Calling, Nested Try Statements, Java Thread Model, and Thread, Runnable, Thread Priorities, Synchronization, Deadlock **File:** Input Stream, Output Stream, and File Stream. Applets-Tag, Order of Applet Initialization, Repainting, Sizing Graphics-Abstract Window Tool Kit Components	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
	Practical	14. Print numbers using while and do-while loop. 15. Compute the power of a number using for loop. 16. Display right angle triangle using of * using nested for loop 17. Find area of a rectangle by creating objects, methods and classes 18. Find area of rectangle using constructor. 19. Find area and volume using single inheritance. 20. Calculate area of a room using method overloading.	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
	Mid Term Test	As per the syllabus covered		
APRIL	Theory	Introduction to networks and internet, history, Working of Internet, internet and its applications- E- mail, telnet, FTP, e-commerce, video conferencing, e-business. Modes of Connecting to Internet, Internet Service Providers(ISPs), Internet address, standard address, domain name, DNS, IP.v6.Modems , World Wide Web and its evolution, uniform resource locator (URL), browsers , Search engine, web saver - apache, IIS, proxy server, HTTP protocol.	B.Sc.(Hons) Electronics, Sem IV	SEC/ Internet and Java Programming
	Practical	21. Program on methodoverriding(print name and salary) 22. Compute the area of a rectangle and a circle using implementing interfaces 23. Program using the concept of multiple inheritance using interfaces (print roll no,marks obtained (part1 , part2, sports),total score). 24. Handle an arithmetic expression x=a/(b-c) using try and catch for expression handling. 25. Program on nested try statements. 26. Program on multiple catch blocks. 27. Writing bytes to a file. 28. Reading bytes from a file. 29. Draw a human face using applet 1. Study of the I-V Characteristics of Diode – Ordinary and Zener Diode. 2. Study of the I-V Characteristics of the CE configuration of BJT and obtain ri, ro, β.	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem II	SEC/ Internet and Java Programming CC-III/ Semiconductor Devices
May	Practical	3. Study of the I-V Characteristics of the Common Base Configuration of BJT and obtain ri, ro, α. 4. Study of the I-V Characteristics of the Common Collector Configuration of BJT and obtain voltage gain, ri, ro.	B.Sc.(Hons) Electronics, Sem II	CC-III/ Semiconductor Devices

June	Practical	5. Study of the I-V Characteristics of the UJT. 6. Study of the I-V Characteristics of the SCR. 7. Study of the I-V Characteristics of JFET.	B.Sc.(Hons) Electronics, Sem II	CC-III/ Semiconductor Devices
July	Practical	8. Study of the I-V Characteristics of MOSFET. 9. Study of Characteristics of Solar Cell 10. Study of Hall Effect	B.Sc.(Hons) Electronics, Sem II	CC-III/ Semiconductor Devices

SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN

Jan-May 2021 (Sem-IV)/April-July 2021(Sem-II)

Name of the Faculty: Dr. Rakhi Narang **Semester: II/IV/VI**
Department: Electronics

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**Sem IV**: Continuous and discrete time signals, Transformation of the independent variable, Exponential and sinusoidal signals, Impulse and unit step functions, Continuous-Time and Discrete-Time Systems, Basic System Properties. Discrete time LTI systems, the Convolution Sum.	B.Sc. Electronics	Core course-IX Signals and System
	Practicals:	**Sem IV:** 1. Generation of Signals: continuous time 2. Generation of Signals: discrete time 3. Time shifting and time scaling of signals.	B.Sc. Electronics	Core course-IX Signals and Systems Lab
February	**Theory:**	**Sem IV:** Continuous time LTI systems, the Convolution integral. Properties of LTI systems, Commutative, Distributive, Associative. LTI systems with and without memory, Invariability, Causality, Stability, Unit Step response. Differential and Difference equation formulation, Block diagram representation of first order systems	B.Sc. Electronics	Core course-IX Signals and Systems
	Practicals:	Sem IV: 1. Convolution 2. Solution of Difference equation. 3. Step and impulse response	B.Sc. Electronics	Core course-IX Signals and Systems Lab
	Assignment	Sem IV: Assignment based on Unit I and II	B.Sc. Electronics	Core course-IX Signals and Systems
March	**Theory:**	**Sem IV:** Laplace Transform, Inverse Laplace Transform, Properties of the Laplace Transform, Laplace Transform Pairs, Laplace Transform for signals, Laplace Transform Methods in Circuit Analysis, Impulse and Step response of RL, RC and RLC circuits.	B.Sc. Electronics	Core course-IX Signals and Systems
	Practicals:	**Sem IV**: Laplace transform and Fourier transform of continuous time signals, generation of Fourier series through Simulink	B.Sc. Electronics	Core course-IX Signals and Systems Lab
	Assignment	Sem IV: Based on Unit I and II		
April	**Theory**	**Sem IV:** Continuous-Time periodic signals, Convergence of the Fourier series, Properties of continuous-Time Fourier series, Discrete-Time periodic signals Properties of Discrete-Time Fourier series. Frequency-Selective filters, Simple RC highpass and lowpass filters	B.Sc. Electronics	Core course-IX Signals and Systems

		Fourier Transform: Aperiodic signals, Periodic signals, Properties of Continuous-time Fourier transform, Convolution and Multiplication Properties, Properties of Fourier transform and basic Fourier transform Pairs.		
	Practicals:	**Sem IV**: 1. Using Simulink for designing systems through transfer function . 2. Design of passive Low pass, high pass, band pass filters and studying the frequency response. **Sem II:** Basic programs in introduction to python. Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programing.	B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems Lab GE II: Artificial Intelligence
	Mid Term Test	Sem IV: Based on Unit IV		
May	**Theory**			
	Practicals:	Sem II: Program to introduce the concept of agent and environment. Program to conduct uninformed search using BFS, DFS, UCS algorithms. Program to conduct informed search using Greedy Best First Search and A* search algorithms.	B.Sc. Electronics	GE II: Artificial Intelligence
June	**Theory**			
	Practicals:	Sem II: Program to conduct game search using a game of Tic-Tac-Toe as example. Program to construct a Bayesian network from given data Program to infer from the constructed Bayesian network.	B.Sc. Electronics	GE II: Artificial Intelligence
July	**Theory**			
	Practicals:	Sem II: Program to understand the concepts of MDP and use value iteration and policy iteration in a grid world. Program to understand the concepts of Reinforcement Learning and use it in a grid world.	B.Sc. Electronics	GE II: Artificial Intelligence

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2020-2021 (Even Semester)

Name of the Faculty: Dr. Basant Saini **Department: Electronics**

Semester: II/IV/VI

Theory : B.Sc (H) Electronics, Sem II (CBCS)
B.Sc (H) Electronics, Sem VI (CBCS)
Practical : B.Sc (H) Electronics, Sem II (CBCS)
B.Sc (H) Electronics, Sem IV (CBCS)
B.Sc (H) Electronics, Sem VI (CBCS

Month		Topics	Course	Paper
JANUARY	**Theory**	**Sem VI:** DC Machines: Basic constructional features and physical principles involved in electrical machines, armature winding (ac and dc), lap and wave connections, different types of pitches D.C. Generators: Construction and principles of operation, brief idea about armature reaction and commutation, E.M.F. Equation, Methods of excitation, and Characteristics of Self excited and separately (Shunt, Compound and Series) excited generators, Losses and efficiency, applications.	B.Sc.(H) Electronics, Sem VI	DSE V/ Electrical Machines
	Practicals	**Sem VI:** Familiarization of the electrical machine laboratory apparatus To study the load characteristics of DC Shunt Generator **Sem IV:** The Java Environment, The Java Development Kit, The Java Virtual Machine 1. Introductory Programs: a. To print a phrase ―Hello World‖. b. To print details: Name, Course name and Semester, Roll No. and paper name. 2. Program on Integer Arithmetic operator: To simplify a given expression. (e=d*a/b+c) 3. Program on Arithmetic Operators using floating point arithmetic (perform +,-,*,/, and %). 4. Program on Arithmetic Operators using Integer arithmetic (perform +,-,*,/, and%). 5. Program on Addition of two numbers (using double type), Subtraction of two numbers (using double type), Multiplication of two numbers (using int type), Division of two numbers (using double type), and Modulo (using double type) using casting. 6. Use of operators	B.Sc.(H) Electronics, Sem VI B.Sc.(H) Electronics, Sem IV	DSE V/ Electrical Machines SEC/ Internet and Java Programming

	Tutorials	NA		
FEBRUARY	**Theory:**	**Sem VI:** D.C. Motors: Comparison of generator and motor action & interchangeability, principle of operation, significance of back EMF, maximum power, Torque and speed relation, Characteristics of series, shunt and Compound excited motors & applications, losses & efficiency, necessity of motor starters, Three point starter, Speed control of DC motors, electronic speed control of DC motors, electric braking	B.Sc.(H) Electronics, Sem VI	DSE V/ Electrical Machines
	Practicals	**Sem VI:** To study Magnetization Characteristics of DC shunt generator. Speed Control of DC motor by field resistance control Speed Control of DC motor by Armature Resistance Control **Sem IV:** 8. Program to understand the difference between prefix and postfix: to increment sum and number and display old and new values both. 9. Swapping of two numbers without using third variable. 10. Program on importing math library and using various functions available in that library. (math.sqrt, math.abs, math.pow, math.min, math.max, math.log) 11. Determine largest of three numbers using nested if-else. 12. Find the average of three subjects and grade the students according to their average marks using else-if ladder. 13. Sum of squares of numbers from 1 to 10 numbers using while loop	B.Sc.(H) Electronics, Sem VI B.Sc.(H) Electronics, Sem IV	DSE V/ Electrical Machines SEC/ Internet and Java Programming
	Tutorials:	NA		

MARCH	**Theory:**	**Sem VI:** Transformers: Types of transformers, Transformer Construction, EMF equation, No load operation, operation under load, Phasor diagram, equivalent circuit of transformer, Transformer Losses, Voltage regulation, condition for maximum efficiency, All day efficiency, Short circuit and open circuit tests, Auto transformers. Polyphase Circuits: Polyphase circuits, three phase transformers, delta-delta and delta –Y connection Single Phase Motors: Single phase induction motors, Construction, principle of operation based on starting methods, Split phase motors, capacitor start motors, capacitor start & run motors, Reluctance Motor, Stepper Motor, Single phase a.c. series motors, Universal motor.	B.Sc.(H) Electronics, Sem VI	DSE V/ Electrical Machines
	Practicals:	**Sem VI:** Determination of Transformer equivalent circuit from Open Circuit Test Determination of Transformer equivalent circuit from Short Circuit Test **Sem IV:** 14. Print numbers using while and do-while loop. 15. Compute the power of a number using for loop. 16. Display right angle triangle using of * using nested for loop 17. Find area of a rectangle by creating objects, methods and classes 18. Find area of rectangle using constructor. 19. Find area and volume using single inheritance. 20. Calculate area of a room using method overloading.	B.Sc.(H) Electronics, Sem VI B.Sc.(H) Electronics, Sem IV	DSE V/ Electrical Machines SEC/ Internet and Java Programming
	Tutorials:	NA		
	Assignment	**Sem VI:** Based on DC Motors and Electrical Machines	B.Sc.(H) Electronics, Sem VI	DSE V/ Electrical Machines

APRIL	**Theory:**	**Sem VI:** Poly Phase Induction Motors: General constructional features, Types of rotors, Rotating magnetic field (Ferrari's Principle), Induction motor as a generalized transformer, equivalent circuit, Production of torque, Slip, Torque equation, Torque-slip characteristics, Speed control of Induction motor. Comparison with DC motor Synchronous Machines: Brief construction details of three phase synchronous generators, E.M.F. equation, Principle of operation of synchronous motor, methods of starting, factors for failure to start, applications, comparison of synchronous and induction motor **Sem II:** Concept of AI, history, current status, scope, agents, environments, Problem Formulations, Review of tree and graph structures, State space representation, Search graph and Search tree. Concept of AI, history, current status, scope, agents, environments, Problem Formulations, Review of tree and graph structures, State space representation, Search graph and Search	B.Sc.(H) Electronics Sem VI B.Sc.(H) Electronics Sem II	DSE V/Electrical Machines GE II/Artificial Intelligence
	Practicals:	**Sem VI:** Speed control of slip-ring Induction Motor To perform speed control of DC motor by using Ward-Leonard Method of speed control **Sem II:** Basic programs in introduction to python. Program in python on strings. Programs in python on lists and dictionaries and introduction to object oriented programing	B.Sc.(H) Electronics Sem VI B.Sc.(H) Electronics Sem II	DSE V/Electrical Machines GE II/Artificial Intelligence
	Tutorials:	NA		
	Test:	**Sem VI:** Based on Transformers and Induction Motors.	B.Sc.(H) Electronics Sem VI	DSE V/Electrical Machines
MAY	**Theory:**	**Sem II:** Concept of AI, history, current status, scope, agents, environments, Problem Formulations, Review of tree and graph structures, State space representation, Search graph and Search tree.	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence

	Practicals:	**Sem II:** Program to introduce the concept of agent and environment. Program to conduct uninformed search using BFS, DFS, UCS algorithms. Program to conduct informed search using Greedy Best First Search and A* search algorithms.	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence
	Tutorials:	NA		
JUNE	**Theory:**	**Sem II:** MDP formulation, utility theory, utility functions, value iteration, policy iteration and partially observable MDPs	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence
	Practicals	**Sem II:** Program to conduct game search using a game of Tic-Tac-Toe as example Program to construct a Bayesian network from given data Program to infer from the constructed Bayesian network	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence
	Assignment	**Sem II:** On PEAS analysis, informed and uniformed search	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence
JULY	**Theory:**	**Sem II:** Passive reinforcement learning, direct utility estimation, adaptive dynamic programming, temporal difference learning, active reinforcement learning- Q learning	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence
	Practicals	**Sem II:** Program to understand the concepts of MDP and use value iteration and policy iteration in a grid world. Program to understand the concepts of Reinforcement Learning and use it in a grid world.	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence
	Assignment	**Sem II:** On Bayesian Network, MDPs and Reinforcement Learning	B.Sc.(H) Electronics Sem II	GE II/Artificial Intelligence

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anita Verma **Department: Zoology**

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	**Unit I: Production of Energy:** Feeding patterns found in different animals; Intracellular and extracellular digestion, digestive enzymes, cellulose digestion in animals.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Unit 2: Physiology of Respiration: Histology of respiratory tract; Mechanism of respiration.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
	Practicals	Effect of isotonic, hypotonic and hypertonic saline solutions on erythrocytes. Preparation of temporary mounts: nerve cells.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Syllabus overview, general instructions and maintenance of lab record. Estimation of haemoglobin using Sahli's haemoglobinometer. Preparation of haemin and haemochromogen crystals. Enumeration of white blood cells using haemocytometer.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

FEBRUARY	**Theory:**	**Unit II: Gas Exchange In Organisms:** Physiology of aquatic and terrestrial breathing, respiratory organs in aquatic and terrestrial organisms: trachea in insects, gills in fishes, lungs in birds; role of skin in respiration.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Unit 2: Physiology of Respiration: Pulmonary ventilation; Respiratory volumes and capacities.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
	Practicals:	Enumeration of white blood cells using haemocytometer. Preparation of blood smear and Differential Leucocyte Count (D.L.C).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Enumeration of red blood cells and white blood cells using haemocytometer. Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum liver, trachea, lung, kidney. Interpretation of recording of frog's heart beat (in situ) under normal and experimental conditions.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

MARCH	**Theory:**	**Unit V: Integrative Physiology:** An overview of neuronal structure and function; general principles of sensory physiology- chemoreceptors (gustatory and olfactory).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Unit 2: Physiology of Respiration: Transport of oxygen and carbon dioxide in blood; Dissociation curves and the factors influencing it.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
	Practicals:	Study of permanent slides of mammalian oesophagus, stomach, ileum, rectum, liver, trachea, lung, kidney, skin.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Study of lung volumes and capacities by Spirometry; Comparison of normal physiological and one pathological condition. Revision.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
	Assignment:	Cellulose digestion/ Circulation/ Feeding patterns in different animals.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Test	**Internal assessment test** (Unit I: Production of Energy, Unit II: Gas Exchange In Organisms and Unit III: Bulk Transport).	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
APRIL	**Theory:**	**Unit V: Integrative Physiology:** General principles of sensory physiology- mechanoreceptors (statocyst in invertebrates and lateral line system of fishes);sonar system in bats; General principles of sensory physiology- electroreceptors (electric organs in fishes); thermoreceptors.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Unit 2: Physiology of Respiration: Carbon monoxide poisoning; Control of respiration.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)

Practicals:	Mounting of septal and pharyngeal nephridia of earthworm. Recording of blood pressure using a sphygmomanometer. Revision. Evaluation of students on their performance in practical and Record Mock Practical Test. Submission of practical files.	B.Sc. (Hons) Biological Science, Semester-IV B.Sc. (Hons) Zoology, Semester-IV	Systems Physiology (BS C-8) Animal Physiology: Life Sustaining Systems (CC IX)
Test:	Mock Test (full syllabus Final Practical assessment.	B.Sc. (Hons) Biological Science, Semester-IV B.Sc. (Hons) Zoology, Semester-IV	Systems Physiology (BS C-8) Animal Physiology: Life Sustaining Systems (CC IX)

SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
April-July, 2021

Name of the Faculty: Dr. Anita Verma
Department: Zoology
Semester: Even – II

Month		Topics	Course	Paper Code/Name
April	**Practical:**	**Experiment 1:** Preparation of temporary mounts: Neurons and Blood film	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
May	**Practical:**	**Experiment 2:** Preparation of haemin and haemochromogen crystals **Experiment 3:** Demonstration of haemoglobin using Sahli's haemoglobinometer Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
June	**Practical:**	**Experiment 4:** Examination of permanent histological sections of mammalian, stomach, lung, kidney, thyroid, pancreas, testis, ovary Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
	Continuous Evaluation:	Tests will be taken from the practical exercises in order to make the students understand the concept thoroughly and in the process, they will be able to learn the exercises and get doubts resolved	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
July	**Practical:**	**Experiment 5:** Determination of ABO Blood group **Experiment 6:** Recording of blood pressure using a Sphygmomanometer in resting condition Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
	Mock Practical Test:	Mock test will be conducted to make the students well versed with the practical exercises and confident for the final practical examination Checking of complete practical file	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Jan-April, 2020-2021 (Even Semester)

Name of the Faculty: Dr. Vartika Mathur
Department: Zoology
Semester: II/IV/VI –Theory and Practical:
B.Sc. (Hons.) Zoology Sem VI Wildlife Conservation and management DSE-XI (TZH)
B.Sc. (H) Biological Sciences Sem VI TBS Animal behavior & chronobiology (DSE 3)

Month		Topics	Course	Paper Code/Name
January	**Theory**	• **CHILD CARE LEAVE**		
	Practicals	• **CHILD CARE LEAVE**		
February	**Theory**	• **CHILD CARE LEAVE**		
	Practicals:	• **CHILD CARE LEAVE**		
March	**Theory**	• **CHILD CARE LEAVE**		
	Practical	• **CHILD CARE LEAVE**		
	Assignment	• **CHILD CARE LEAVE**		
	Mid Term Test	• **CHILD CARE LEAVE**		
APRIL	**Theory**	; **Population estimation** Faecal analysis of ungulates and carnivores: Faecal samples, slide preparation, Hair identification, Pug marks	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI

	Practical	• Revision	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE 3)
		• Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc. • Circular, Square & rectangular plots, Parker's 2 Step and other methods for ground cover assessment, Tree canopy cover assessment, Shrub cover assessment. • Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences) •	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Revision/Mock test	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE 3)

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Even Semester 2021 (Jan-April)

Name of the Faculty: Dr. Om Prakash
Department: Zoology
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Biotechnology** Southern blotting	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
		Immunology **Unit 1**: **Overview of the Immune System** Introduction to basic concepts in immunology, components of immune system, principles of innate and adaptive immune system	B.Sc Life Sciences Sem VI	DSEZOOLOGY 4
	Practical	**Immunology** To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc Life Sciences Sem VI (Two batches)	DSE Zoology 4
February	**Theory**	**Biotechnology** Northern blotting Western blotting	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
		Immunology **Unit 2**: **Cells and Organs of the Immune System** Haematopoeisis, Cells of immune system and organs (primary and secondary lymphoid organs) of the immune system	B.Sc Life Sciences Sem VI	DSEZOOLOGY 4
	Practicals:	**Immunology** Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis	B.Sc Life Sciences Sem VI (Two batches)	DSE Zoology 4
March	**Theory**	**Biotechnology** Polymerase Chain Reaction	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
		Immunology **Unit 3: Antigens** Basic properties of antigens, B and T cell epitopes, haptens and adjuvants **Unit 4**: **Antibodies** Structure, classes and function of antibodies, monoclonal antibodies, antigen antibody interactions as tools for research and diagnosis	B.Sc Life Sciences Sem VI	DSEZOOLOGY 4

	Practical	Study of lymphoid organs: spleen, thymus, lymph nodes. Preparation of stained blood film.	B.Sc Life Sciences Sem VI (Two batches)	Immunology
	<u>Mid Term Test</u>	Test of Animal Biotechnology From all units taught	B.Sc. Hons Zoology Sem VI DSE I	
APRIL	**Theory:**	**Immunology** **Unit 7: Vaccines 4** General introduction to vaccines, Various types of vaccines	B.Sc Life Sciences Sem VI	DSEZOOLOGY 4
		Biotechnology DNA Finger Printing DNA micro array	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
	Practicals:			
		Revision Mock tests.	B.Sc Life Sciences Sem VI (Two batches)	DSE Zoology 4

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Even Semester 2021 (Jan-April)

Name of the Faculty: Dr. Ajaib Singh
Department: Zoology
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	Unit 2: Carbohydrate metabolism: Glycolysis, citric acid cycle, HMP pathway, GNG, glycogenesis, glycogenolysis.	B.Sc Zoology Sem IV	CC X/ Biochemistry of metabolic processes
		Cloning vectors: plasmids, cosmids, phagemids, phage lambda, M13, BAC, YAC, MAC and expression vectors.	B.Sc Zoology Sem VI	DSE/ Animal Biotechnology
	Practical	Genomic DNA and plasmid DNA isolation,Transformation efficiency, PCR	B. Sc. (H) Zoology 3nd year Sem VI	DSEIII/ Animal Biotechnology
		To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc LifeSciences Sem VI (Two batches)	DSE/ Immunolo gy
February	**Theory**	Unit 5: Oxidative phosphorylation. Redox system, ETC, inhibitors and uncouplers.	B.Sc Zoology SemIV	CC X/ Biochemistry of metabolic processes
		Restriction enzymes, nomenclature, type II. Construction of genomic and cDNA library. Screening by colony and plaque hybridization.	B.Sc Zoology SemVI	DSE/ Animal Biotechnology
	Practicals:	Wetlab experiment of Genomic DNA and Plasmid DNA,Restriction Mapping, Transformation numericals practice	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology

		Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis	B.Sc LifeSciences SemVI (Twobatches)	DSE/ Immunolo gy
March	**Theory**	Biochemistryofmetabolicprocesses Unit 1: Catabolism vs anabolism. Compartmentalization of metabolic pathways, shuttle systems and transporters.	B.Sc Zoology SemIV	CC X/ Biochemistry of metabolic processes
		Animalbiotechnology Recombinant DNA in medicine, recombinant insulin and human growth hormone. Gene therapy.	B.Sc Zoology SemVI	DSE/ Animal Biotechnology
	Practical	DNA sequencing, DNA Fingerprinting, Restriction digestion, Agarose gel electrophoresis run	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology
		Study of lymphoid organs: spleen, thymus, lymph nodes. Preparation of stained blood film.	B.Sc LifeSciences SemVI (Twobatches)	DSE/ Immunolo gy
	Mid Term Test	Test of B.ScZoology SemIV (Biochemistry of metabolic processes)		
		Test of B.ScZoology SemVI (Animal. Biotechnology)		
APRIL	**Theory:**	Biochemistryofmetabolicprocesses Unit 1: ATP as energy currency, coupled reactions, use of reducing equivalents and cofactors. Intermediary metabolism.	B.Sc Zoology SemIV	CC X/ Biochemistry of metabolic processes

	Animal biotechnology Animal cell culture.	B.Sc Zoology SemVI	DSE/ Animal Biotechnology
Practicals:	Western Blotting, Southern, Northern blotting Revision exercises and test, viva for practical exams, checking of project report	B. Sc. (H) Zoology 3rd year Sem VI	DSE: Animal Biotechnology
	Revision Mock tests.	B.Sc LifeSciences SemVI (Twobatches)	DSE/ Immunology

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January -May 2021, (Session 2020-21)

Name of the Faculty: Dr. Rajendra Phartyal

Department: Zoology

Semester: IV, VI: Theory: B.Sc. H . Biological Science Sem VI(Concepts Of Evolutionary Biology), B.Sc. (H) Zoology Sem VI (Evolutionary Biology), BSc (H) Zoology Semester IV (Physiology: Controlling Life Sustaining Systems)
Practicals: B.Sc. H . Biological Science Sem VI(Concepts Of Evolutionary Biology), B.Sc. (H) Zoology Sem VI (Evolutionary Biology), BSc (H) Zoology Semester IV (Physiology: Controlling Life Sustaining Systems)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	**Concepts Of Evolutionary Biology** Paleobiological – Concept of Stratigraphy and geological timescale; fossil study (types, formation and dating methods). Anatomical – Vestigial organs; Homologous and Analogous organs (concept of parallelism and convergence in evolution). Taxonomic – Transitional forms/evolutionary intermediates; living fossils. Adaptive radiation	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology Evidences of Evolution: Fossil record (types of fossils, transitional forms, geological time scale Product of evolution: Micro evolutionary changes (inter-population variations, clines, races, Species concept)	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology: Life Sustaining Systems **Physiology of Digestion** Structural organization and functions of gastrointestinal tract and associated glands; Mechanical and chemical digestion of food; Absorptions of carbohydrates, lipids, proteins, water, minerals and vitamins;	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

	Practicals:	**Concepts Of Evolutionary Biology** • Study of types of fossils (e.g. trails, casts and moulds and others) and Index fossils of Palaeozoic era • Vestigial, Analogous and Homologous organs using photographs, models or specimen • Calculations of genotypic, phenotypic and allelic frequencies from the data provided • Simulation experiments using coloured beads/playing cards to understand the effects of Natural Selection	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology • Study of fossils from models/ pictures • Study of homology and analogy from suitable specimens • Study and verification of Hardy-Weinberg	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems Syllabus overview, general instructions and maintenance of lab record. Estimation of haemoglobin using Sahli's haemoglobinometer Preparation of haemin and haemochromogen crystals Enumeration of white blood cells using haemocytometer	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
FEBRUARY	**Theory:**	**Concepts Of Evolutionary Biology** Periodic extinctions , Mass-scale extinctions – Causes and events Concept of species as a real entity, Mechanisms of speciation – Allopatric; sympatric; peripatric, Patterns of speciation – Anagenesis and Cladogenesis;	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology Isolating mechanisms, modes of speciation—allopatric, sympatric Extinctions, Back ground and mass extinctions (causes and effects), detailed example of K-T extinction	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems • Hormonal control of secretion of enzymes in Gastrointestinal tract. • **Renal Physiology** Structure of kidney and its functional unit	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	Practicals:	**Concepts Of Evolutionary Biology** • Simulation experiments using coloured beads/playing cards to understand the effects of Bottleneck effect and Founder effect • **Selection Exemplifying Adaptive strategies (**Colouration, Mimetic form, Co-adaptation and co-evolution; Adaptations to aquatic, fossorial and arboreal modes of life**)** using Specimens	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)

		Evolutionary Biology Demonstration of role of following using simulation studies • Natural selection • Bottleneck effect in changing allele frequencies • Founder effect in changing allele frequencies	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems • Enumeration of red blood cells and white blood cells using haemocytometer • Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, • rectum liver, trachea, lung, kidney • Interpretation of recording of frog's heart beat (in situ) under normal and experimental conditions.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
MARCH	**Theory:**	**Concepts Of Evolutionary Biology** Phylogenetic – a) Fossil based – Phylogeny of horse as a model. b) Molecule based – Protein model (Cytochrome C); gene model (Globin gene family) Adaptive radiation Phyletic Gradualism and Punctuated Equilibrium (Quantum Evolution), Basis of speciation – Isolating mechanisms	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology Evolution of horse Adaptive radiation / macroevolution (exemplified by Galapagos finches	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems Mechanism of urine formation; Regulation of water balance;	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	Practicals:	**Concepts Of Evolutionary Biology** • *Connecting links/transitional forms* - • Living fossils • Sampling of human height, weight and BMI for continuous variation • Sampling for discrete characterstics (dominant vs recessive) for discontinuous variations	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)

		Evolutionary Biology • Teaching Bioinformatic tools and introduction to databases Alignment using clustal X and construction of phylogenetic tree	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems • Study of lung volumes and capacities by spirometry Comparison of normal physiological and one pathological condition. • Revision	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	Assignment	**Concepts Of Evolutionary Biology**	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
	TESTS	**Concepts Of Evolutionary Biology**	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)
APRIL	**Theory**	**Concepts Of Evolutionary Biology** Primate characteristics and unique Hominin characteristics. Primate phylogeny leading to Hominin line. Human migration – Theories. Brief reference to molecular analysis of human origin – Mitochondrial DNA and Y-chromosome studies	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology Origin and evolution of man, Unique hominin characteristics contrasted with primate characteristics, primate phylogeny from *Dryopithecus* leading to *Homo sapiens*, molecular analysis of human origin	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Physiology:Life Sustaining Systems Regulation of acid-base balance.Haemostasis: Blood clotting system, Kininogen Kinin system, Fibrinolytic system.	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

Practicals:	**Concepts Of Evolutionary Biology** • Digit reduction in horse phylogeny (study from chart) • Study of horse skull to illustrate key features in equine evolution • Study of monkey and human skull - • Revision and mock practical test	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
	Evolutionary Biology • Graphical representation and interpretation of data of height/ weight of a sample of 100 humans in relation to their age and sex. • Revision and mock practical test	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
	Physiology:Life Sustaining Systems • Recording of blood pressure using a sphygmomanometer • Revision • Evaluation of students on their performance in practical and Record • Mock Practical Test • Submission of practical files	BSc (H) Zoology Semester IV	CC-IX (Physiology: Life Sustaining Systems)

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Mansi Verma **Department: Zoology**

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Introduction to GMOs	B.Sc. (H) Zoology Semester VI	Animal Biotechnology
		Mendel's work on transmission of traits, Genetic Variation, Molecular basis of Genetic Information, Principles of Inheritance, Chromosome theory of inheritance, Incomplete dominance and codominance, Multiple alleles, Lethal alleles, Epistasis,	B.Sc. (H.) Life Sciences Semester IV	Genetics and Evolutionary Biology
	Practicals:	Study of Human Karyotypes (normal and abnormal). Study of Mendelian Inheritance and gene interactions (Non Mendelian Inheritance) using suitable examples. Verify the results using Chi-square test. *With continuous evaluation* Evaluation of students on their performance in	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	Genetics and Evolutionary Biology
		1. Study of fossils from models/ pictures 2. Study of homology and analogy from suitable specimens 3. Study and verification of Hardy-Weinberg Law by chi square analysis	B.Sc. (H) Zoology Semester VI	Evolutionary Biology
FEBRUARY	Theory	Agrobacterium mediated transformation and other methods of plant transformation	B.Sc. (H) Zoology Semester VI	Animal Biotechnology

		Pleiotropy, sex linked inheritance, extra-chromosomal inheritance Linkage and crossing over, Recombination frequency as a measure of linkage intensity, two factor and three factor crosses, Interference and coincidence,	B.Sc. (H.) Life Sciences Semester IV	Genetics and Evolutionary Biology
	Practical	Study of homology and analogy from suitable specimens/ pictures . Study of fossil evidences from plaster cast models and pictures Phylogeny of horse with diagrams/ cut outs of limbs and teeth of horse ancestors *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	Genetics and Evolutionary Biology
		Demonstration of role of following using simulation studies i) natural selection ii) bottleneck effect in changing allele frequencies iii) Founder effect in changing allele frequencies	B.Sc. (H) Zoology Semester VI	Evolutionary Biology
MARCH	Theory	Transgenic animals : retroviral method, microinjection, embryonic stem cells	B.Sc. (H) Zoology Semester VI	Animal Biotechnology
		Somatic cell genetics - an alternative approach to gene mapping Chromosomal Mutations: Deletion, Duplication, Inversion, Translocation, Aneuploidy and Polyploidy; Gene mutations: Induced versus Spontaneous mutations, Back versus Suppressor mutations,	B.Sc. (H.) Life Sciences Semester IV	Genetics and Evolutionary Biology
	Practical	Darwin's Finches with diagrams/ cut outs of beaks of different species	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	Genetics and Evolutionary Biology

		Study of Linkage, recombination, gene mapping using the data. *With continuous evaluation* Evaluation of students on their performance in practical and Record		
		Teaching Bioinformatic tools and introduction to databases, Alignment using clustal X and construction of phylogenetic tree	B.Sc. (H) Zoology Semester VI	Evolutionary Biology
	Assignment	Assignment of Immunology Assignment of Biotechnology		
	Mid Term Test			
APRIL	Theory	Genetically modified animals and cloning, Dolly , polly Applications of transgenic plants: insect and herbicide resistant plants.	B.Sc. (H) Zoology Semester VI	Animal Biotechnology
		Chromosomal mechanisms, dosage compensation	B.Sc. (H.) Life Sciences Semester IV	Genetics and Evolutionary Biology
	Practical	Revision Mock Test	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	Genetics and Evolutionary Biology
		Graphical representation and interpretation of data of height/ weight of a sample of 100 humans in relation to their age and sex. Mock test	B.Sc. (H) Zoology Semester VI	Evolutionary Biology

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Academic Planner: Even Semester 2021 (Jan-April)

Name of the Faculty: Dr. P.Jayaraj
Department: Zoology
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	DEVELOPMENTAL BIOLOGY Unit 1: Introduction 4 Historical perspective and basic concepts: Phases of development, Cell-Cell interaction, Pattern formation, Differentiation and growth, Differential gene expression, Cytoplasmic determinants and asymmetric cell division	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		Immunology • Unit 5 : Functions of cytokines	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
		COMPARATIVE ANATOMY OF VERTEBRATES **Unit2: Skeletal System** Outline of axial and appendicular skeleton: basic plan of bones of skull, girdles and limbs. Classification of vertebrae, structure of a typical vertebra, Jaw suspensorium, Visceral arches.	B.Sc (H) Zoology II year VI semester (SZH)	CC VIII
	Practicals	DEVELOPMENTAL BIOLOGY Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages)	B.Sc (H) Zoology III year VI semester (TZH	CORE COURSE XIII
		IMMUNOLOGY Demonstration of lymphoid organs Histological study of spleen, thymus, Ltmphnodes through slides/photographs	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
		COMPARATIVE ANATOMY OF VERTEBRATES Study Carapace and plastron of turtle/tortoise. Study of Mammalian skulls: One herbivorous and one carnivorous animal.	B.Sc (H) Zoology II year VI semester (SZH)	CC VIII

February	**Theory**	DEVELOPMENTAL BIOLOGY Unit 2: Early Embryonic Development Gametogenesis, Spermatogenesis, Oogenesis; Types of eggs, Egg membranes; Fertilization (External and Internal): Changes in gametes, Blocks to polyspermy; Planes and patterns of cleavage; Types of Blastula; Fate maps (including Techniques)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		Immunology Unit 5 : Complement system, components and pathways	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
		COMPARATIVE ANATOMY OF VERTEBRATES **Unit2: Skeletal System** Classification of vertebrae, structure of a typical vertebra, Jaw suspensorium	B.Sc (H) Zoology II year VI semester (SZH)	CORE COURSE XIII
	Practicals:	DEVELOPMENTAL BIOLOGY Study of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		IMMUNOLOGY Preparation of stained blood film to study various types of blood cells Ouchterlonony's double immune-diffusion method	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
		COMPARATIVE ANATOMY OF VERTEBRATES Study of digestive, circulatory and urinogenital system of frog/rat through videos on dissection or through virtual dissections.	B.Sc (H) Zoology II year VI semester (SZH)	CC VIII
March	**Theory**	DEVELOPMENTAL BIOLOGY Early development of frog and chick up to gastrulation; Embryonic induction and organizers Unit 3: Late Embryonic Development 8 Fate of Germ Layers; Extra-embryonic membranes in birds.Implantation of embryo in humans, Placenta (Structure, types and functions of placenta)	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII

		Immunology Unit 6: Immune system in health and disease Gell and Coombs classification and brief description of various types of hypersensitivity	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
		COMPARATIVE ANATOMY OF VERTEBRATES **Unit 5: Skeletal System** Visceral arches. **Unit 6: Urinogenital System** Succession of kidney	B.Sc (H) Zoology II year VI semester (SZH)	CORE COURSE XIII
	Practical	DEVELOPMENTAL BIOLOGY Study of the developmental stages and life cycle of Drosophila from stock culture	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES Study of anatomical details of any two organs (brain, heart, lung, kidney, eye and ear) through videos.	B.Sc (H) Zoology II year VI semester (SZH)	CC VIII
		IMMUNOLOGY ABO blood group determination Cell counting and viability test from spleenocytes of farm bred animals/cells lines	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
	<u>Assignment</u>	DEVELOPMENTAL BIOLOGY To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc. Life sciences sem VI(FLS)	
		COMPARATIVE ANATOMY OF VERTEBRATES To Solve and submit questionnaire for the topics covered before mid semester break	B.Sc (H) Zoology II year VI semester (SZH)	CORE COURSE XIII

	Mid Term Test	Topics covered before mid semester break and from assingnment		
APRIL	**Theory:**	DEVELOPMENTAL BIOLOGY Unit 4: Post Embryonic Development Metamorphosis: Changes, hormonal regulations in amphibians and insects; Regeneration: Modes of regeneration, epimorphosis, morphallaxis and compensatory regeneration (with one example each); Ageing: Concepts and Theories Unit 5: Implications of Developmental Biology Teratogenesis: Teratogenic agents and their effects on embryonic development; In vitro fertilization, Stem cell (ESC), Amniocentesis	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		Unit 6: Urinogenital System Evolution of urinogenital ducts, Types of mammalian uteri.	B.Sc (H) Zoology II year VI semester (TZH	CORE COURSE XIII

		Immunology Unit 6: Immune system in health and disease Introduction to concepts of autoimmunity and immunodeficiency	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
	Practicals:	**DEVELOPMENTAL BIOLOGY** **Study of different sections of placenta (photomicropgraph/ slides)** **Submission of project report on Drosophila culture/chick embryo development** • Revision/ mock exam	B.Sc (H) Zoology III year VI semester (TZH)	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES Documentary film show on vertebrates/Visit to Zoological park, Biodiversity park or Sanctuary.	B.Sc (H) Zoology II year VI semester (SZH)	CC VIII
		IMMUNOLOGY Demonstration of ELISA and Immunoelectrophoresis	B.Sc. Life sciences semVI, CBCS (DSE)	DSE II
		• Revision/ mock exam		

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
JAN- APIRL, 2021

Name of the Faculty: Dr. Riyaz Bakshi

Department: Zoology

Semester: II /IV/VI EVEN SEM,

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit2: ORIGIN AND CLASSIFICATION OF LAKES. LAKE AS AN ECOSYSTEM	B.Sc. Sem IV	**GE IV: A**quatic biology
		Introduction to public health & hygiene, Environment & health hazards	BSc. Life Science Sem-VI	SEC: Public health & hygiene
		Unit4. Cardiovascular systems: structure of heart	B.Sc Zoology 2nd year Sem IV	Physiology: Life sustaining systems
	Practicals:	DEVELOPMENTAL BIOLOGY Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages)	B.Sc (H) Zoology III year VI semester (TZH	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES Study Carapace and plastron of turtle/tortoise. Study of Mammalian skulls: One herbivorous and one carnivorous animal.	B.Sc (H) Zoology II year IVsemester (SZH)	CC VIII

		Public health & Hygiene Estimate the blood glucose level by glucometer / kit To study the functioning and clinical significance of sphygmomanometer. To determine the BMI	BSc. Life Science Sem-VI	**SEC: Public health and hygiene**
	Tutorials:			
FEB.	**Theory:**	Unit.2: Thermal stratification, dissolved solids **Communicable diseases** Unit 3: Cardiovascular systems CARDIAC IMPULSE, ECG	B.Sc. Sem IV BSc. Life Science Sem-VI B.Sc Zoology 2nd year Sem IV	**GE IV: A**quatic biology **SEC Public health and hygiene** Physiology: Life sustaining systems
	Practicals:	DEVELOPMENTAL BIOLOGY Study of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages)	B.Sc (H) Zoology III year VI semester (TZH	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES Study of digestive, circulatory and urinogenital system of frog/rat through videos on dissection or through virtual dissections.	B.Sc (H) Zoology II year IVsemester (SZH)	CC VIII
		Public Health & Hygiene To study the medically important organisms- Rat, Cockroach, Ants, Mosquitoes, Housefly	BSc. Life Science Sem-VI	**SEC: Public health and hygiene**

	Tutorials:			
MARCH	**Theory:**	**Carbonate, phosphates, nitrates** Noncommnicable diseases Unit 4 Cardiovascular systems: frank starling law	B.Sc. Sem IV BSc. Life Science Sem-VI B.Sc Zoology 2nd year Sem IV	**GE IV: A**quatic biology SEC **Public health and hygiene** Physiology: Life sustaining systems
	Practicals:			
		DEVELOPMENTAL BIOLOGY Early development of frog and chick up to gastrulation; Embryonic induction and organizers Unit 3: Late Embryonic Development 8 Fate of Germ Layers; Extra-embryonic membranes in birds.Implantation of embryo in humans, Placenta (Structure, types and functions of placenta)	B.Sc (H) Zoology III year VI semester (TZH	CORE COURSE XIII
		COMPARATIVE ANATOMY OF VERTEBRATES Unit 5: Skeletal System Visceral arches. Unit 6: Urinogenital System Succession of kidney	B.Sc (H) Zoology II year IVsemester (SZH)	CC VIII
		Public Health & Hygiene To estimate the purity of water by MPN method To study the different Life style diseases- diabetes, Hypertension, TB, PCOD	BSc. Life Science Sem-VI	**SEC: Public health and hygiene**
		-		
	Assignment		BSc. Life Science Sem-VI	**SEC: Public health and hygiene**

APRIL	**Theory**	**Unit2.: Nutrients cycles in lakes** **Social health problems** UNIT 4. Cardiovascular systems Pace maker,	B.Sc. Sem IV BSc. Life Science Sem-VI B.Sc Zoology 2nd year Sem IV	**GE IV: A**quatic biology **SEC Public health and hygiene** Physiology: Life sustaining systems
		• DEVELOPMENTAL BIOLOGY • • Study of different sections of placenta • (photomicropgraph/ slides) • Submission of project report on • Drosophila culture/chick embryo • development • • Revision/ mock exam	B.Sc (H) Zoology III year VI semester (TZH	CORE COURSE XIII
		• COMPARATIVE ANATOMY OF • VERTEBRATES • Documentary film show on vertebrates/Visit • to Zoological park, Biodiversity park or • Sanctuary.	B.Sc (H) Zoology II year IVsemester (SZH)	CORE COURSE VIII
		Public Health & Hygiene Revision/ mock TEST	BSc. Life Science Sem-VI	**SEC: Public health and hygiene**

SEMESTER WISE TEACHINGPLAN

SRI VENKATESWARA COLLEGE

Jan-April, 2020-2021 (Even Semester)

Name of the Faculty: Dr. Vagisha Rawal
Department: Zoology
Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory**	**Management of excess population** • Bio- telemetry; Care of injured and diseased animal; Quarantine; Common diseases of wild animal	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Biological Rhythm • Types and characteristics of biological rhythms: Short- and Long- term rhythms; Circadian rhythms; Tidal rhythms and Lunar rhythms;	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
	Practicals	**Public health & Hygiene** • Estimate the blood glucose level by glucometer / kit • To study the functioning and clinical significance of sphygmomanometer. • To determine the BMI	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		Animal behavior & chronobiology • To study nests and nesting habits of the birds and social insects. • To study different types of animal behavior such as habituation, social life, courtship behavior in insects, and parental care from short videos/movies and prepare a short report.	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Wildlife Conservation and management • Identification of flora, mammalian fauna, avian fauna, herpeto-fauna • Nests of Birds • Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders)	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
February	**Theory**	**Habitat analysis** • Physical parameters: Topography, Geology, Soil and water;	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management

		• Biological Parameters: food, cover, forage, browse and cover estimation;		DSE-IV
		Altruism • Reciprocal altruism, Hamilton's rule and inclusive fitness with suitable examples **Mechanisms of Behavior** • Innate behavior, Instinct, Stimulus filtering, Sign stimuli, Code breakers	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
	Practicals:	**Public Health & Hygiene** • To study the medically important organisms- Rat, Cockroach, Ants, Mosquitoes, Housefly	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		Animal behavior & chronobiology • To study the behavioural responses of wood lice to dry condition. • To study the behavioural responses of wood lice to humid conditions.	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Wildlife Conservation and management • Demonstration of basic equipment needed in wildlife studies use, care and maintenance: Global Positioning System, Various types of Cameras and lenses) • PCQ, Circular, Square & rectangular plots other methods for ground cover assessment.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
March	**Theory**	**Management planning of wild life in protected areas** • Estimation of carrying capacity; Eco tourism / wild life tourism in forests; Concept of climax persistence; Ecology of perturbence.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Sexual Behavior • Asymmetry of sex, Sexual dimorphism mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Infanticide, Consequences of mate choice for femalefitness, • Sexual conflict for male verses female parental care, Courtship behavior in 3-spinestickleback..	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
	Practical	**Public Health & Hygiene** • To estimate the purity of water by MPN method • To study the different Life style diseases- diabetes, Hypertension, TB, PCOD	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		Wildlife Conservation and management • Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences) • **Virtual tour of 'Aravalli Biodiversity Park'**	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI

		Animal behavior & chronobiology • To study geotaxis behaviour in earthworm. • To study the phototaxis behaviour in insect larvae. • **Virtual tour of 'Aravalli Biodiversity Park'**	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
	Assignment	**WILD LIFE CONSERVATION AND MANAGEMENT** • Powerpoint presentations on the topics from syllabus	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Animal behavior and chronobiology Topic: PPTs on Animal behavior related concepts	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
	Mid Term Test	**Animal behavior and chronobiology** • Test will include all the topics covered	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Wildlife Conservation and management • Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
APRIL	**Theory:**	**Population estimation** • Population density, Natality, Birth rate, Mortality, fertility schedules and sex ratio computation; • Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Revision	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
	Practicals:	• Public Health & Hygiene • Revision/ mock exam	B.Sc. Life Sciences Sem VI TLS	Public Health & Hygiene (SEC)
		• Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups. • Revision/ mock exam	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		• Revision/Mock test	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE
January-May, 2021

Name of the Faculty: Dr. Richa Misra

Department: Zoology

Semester: II, IV, VI (Even)

Month		Topics	Course	Paper Code/Name
January	**Theory: (1+1+2+1+1)**	Unit IV: Regulatory Physiology: Thermoregulation chapter	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Introduction to Research Methodology, Importance of proposals and surveys, Overview of research paper	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Introduction to Evolutionary Biology, Introduction to Population Genetics (Hardy-Weinberg equilibrium)	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science, Importance of Referencing and Understanding of Plagiarism and Tools, Types of Reference Styles,	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		Genomic DNA and plasmid DNA isolation, Transformation efficiency, PCR	B. Sc. (H) Zoology 3nd year Sem VI	DSEIII/ Animal Biotechnology
		Identification of flora, mammalian fauna, avian fauna, herpeto-fauna, Nest of birds, Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders)	B. Sc. (H) Zoology 3nd year Sem VI	DSEIV/ Wildlife Conservation and Management
February	**Theory:**	Unit IV: Osmoregulation: Regulation of Water and solutes in aquatic and terrestrial animals, Osmoregulatory Organs in various terrestrial and aquatic animals	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Discussion of various current areas of Research, Motivation for Research, Finalizing Survey Topics	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Natural Selection, types, derivation of unit of selection, kin selection, sexual selection, Balanced Polymorphism	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Exercises related to Plagiarism, Learning usage of Endnote and other similar softwares, Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology
		Wetlab experiment of Genomic DNA and Plasmid DNA, Restriction Mapping, Transformation numericals practice	B. Sc. (H) Zoology 3nd year Sem VI	DSE/ Animal Biotechnology
		Demonstration of basic equipment needed in wildlife studies use, care and maintenance: Global Positioning System, Various types of Cameras and lenses) PCQ, Circular, Square & rectangular plots other methods for ground cover assessment	B. Sc. (H) Zoology 3nd year Sem VI	DSEIV/ Wildlife Conservation and Management
March	**Theory:**	Unit IV: Regulatory Physiology: Excretion in animals and excretory organs	B. Sc. (H) Bio Sciences Sem IV	BS-C8: Systems Physiology
		Concept of Null and alternate hypothesis, Discussion about Survey progress and Proposal topics with students	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Genetic drift, Role of migration and mutation in changing allele frequencies, Phylogeny, Understanding Phylogenetic trees and steps to construction	B. Sc. (H) Zoology 3nd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals	Troubleshooting related to analysis of survey and proposal	B. Sc. (H) Zoology 2nd year Sem IV	SEC/ Research Methodology

	(4+4+4=12)	DNA sequencing, DNA Fingerprinting, Restriction digestion, Agarose gel electrophoresis run	B. Sc. (H) Zoology 3rd year Sem VI	DSE/ Animal Biotechnology
		Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences) Virtual tour of 'Aravalli Biodiversity Park'	B. Sc. (H) Zoology 3rd year Sem VI	DSEIV/ Wildlife Conservation and Management
	Assignment	Topics for presentation assigned to students related to the syllabus and a new discovery related to the topic	B. Sc. (H) Biological Sciences 2nd year Sem IV	BS-C8: Systems Physiology
		Assignment related to various topics from syllabus	B. Sc. (H) Zoology 3rd year Sem VI	CC-XIV/Evolutionary Biology
April	**Mid Term Test**	Time-bound OBE Test questions of covered topics	B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology
		Time-bound OBE Test questions of covered topics	B. Sc. (H) Zoology 3rd year Sem VI	CC-XIV/Evolutionary Biology
April	**Theory:**	Unit III: Bulk Transport (Circulation, Cardiac Output) Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2nd year Sem IV	BS-C8: Systems Physiology
		Progress Updates of Research Proposal and Survey Reports	B. Sc. (H) Zoology 2nd year Sem IV	SEC/Research Methodology
		Molecular clock, Discussion of Mid-term Test paper and previous year question papers	B. Sc. (H) Zoology 3rd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals:	Survey and Proposal submission, viva for practical exams	B. Sc. (H) Zoology 2nd year Sem IV	SEC: Research Methodology
		Western Blotting, Southern, Northern blotting Revision exercises and test, viva for practical exams, checking of project report	B. Sc. (H) Zoology 3rd year Sem VI	DSE: Animal Biotechnology
		Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats & pellet. Revision exercises and test, viva for practical exams	B. Sc. (H) Zoology 3rd year Sem VI	DSEIV/ Wildlife Conservation and Management

SEMESTER WISE TEACHING PLAN (2020-21)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Namita Nayyar **Department: Zoology**

Semester: Even IV/VI

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**Unit 6: Circulatory System** General plan of circulation, evolution of heart and aortic arches	B.Sc. (H) Zoology Semester IV	**Comparative anatomy of Vertebrates**
		Unit 6: History of Life Major Events in History of Life **Unit 7: Introduction to Evolutionary Theories** Lamarckism, Darwinism	B.Sc. Life Sciences Semester IV	**Genetics and Evolutionary Biology**
		Unit 5 Forces of Evolution – Qualitative Studies Based on Field Observations - Natural selection as a guiding force Its attributes and action Basic characteristics of natural selection. - Colouration, camouflage and mimicry, Co-adaptation and co-evolution, Man-made causes of change – Industrial melanism; brief mention of drug, pesticide, antibiotic and herbicide resistance in various organisms.	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
	Practicals:	3. Study of human karyotypes (normal and abnormal). 4. Study of homology and analogy from suitable specimens/pictures.	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		3. Study of human karyotypes (normal and abnormal). 4. Study of homology and analogy from suitable specimens/pictures	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		(A) Evidences of fossils 1. Study of types of fossils (e.g. trails, casts and moulds and others) and Index fossils of Palaeozoic era *2. Connecting links/transitional forms - Eg. Euglena, Neopilina, Balanoglossus, Chimaera, Tiktaalik, Archaeopteryx, Ornithorhynchus* 3. Living fossils - Eg. *Limulus, Peripatus, Latimeria, Sphaenodon* 4. Vestigial, Analogous and Homologous organs using photographs, models or specimen	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
February	**Theory:**	**Unit 4: Respiratory System** Lungs and air sacs; Accessory respiratory organs	B.Sc. (H) Zoology Semester IV	**Comparative anatomy of Vertebrates**

		Unit 7: Introduction to Evolutionary Theories Neo Darwinism **Unit 9: Processes of Evolutionary Change:** Organic variations; Isolating Mechanisms	B.Sc. Life Sciences Semester IV	**Genetics and Evolutionary Biology**
		- Unit 5 Forces of Evolution – Qualitative Studies Based on Field Observation Modes of selection, Polymorphism, Heterosis and Balanced lethal systems. Genetic Drift (Sewall Wright effect) as a stochastic/random force – Its attributes and action. Basic characteristics of drift; selection vs. drift, Bottleneck effect. Founder principle.	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
	Practicals:	6. Study and verification of Hardy-Weinberg Law by Chi-square analysis. Practice numericals	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		6. Study and verification of Hardy-Weinberg Law by Chi-square analysis. Practice numericals	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		D) Neo-Darwinian Studies 1. Calculations of genotypic, phenotypic and allelic frequencies from the data provided 2. Simulation experiments using coloured beads/playing cards to understand the effects of Selection and Genetic drift on gene frequencies **(C) Selection Exemplifying Adaptive strategies (**Colouration, Mimetic form, Co-adaptation and co-evolution; Adaptations to aquatic, fossorial and arboreal modes of life**)** using Specimens	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
March	**Theory:**	**Unit 7: Nervous System** - Comparative account of brain Autonomic nervous system,	B.Sc. (H) Zoology Semester IV	**Comparative anatomy of Vertebrates**
		Unit 9: Processes of Evolutionary Change: Natural selection (Example: Industrial melanism); Types of natural selection (Directional, Stabilizing, Disruptive), Artificial selection	B.Sc. Life Sciences Semester IV	**Genetics and Evolutionary Biology**
		Unit 6 Forces of Evolution – Quantitative Studies Based on Biomathematics Population genetics – Gene pool; gene/allele frequency; genotypic frequency; phenotypic frequency (simple problems for calculation). Conservation of gene frequencies (when selection does not operate) – Hardy-Weinberg's Law of Genetic Equilibrium. Alterations in gene frequency (when selection operates) –	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**

		Calculation based on Selection Coefficient and Fitness). Fluctuations in gene frequency (when drift operates) – Calculation based on standard deviation		
	Practicals	1. Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis). 2. Study of linkage, recombination, gene mapping using data.	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		1. Study of Mendelian inheritance and gene interactions (non-Mendelian inheritance) using suitable examples (chi-square analysis). 2. Study of linkage, recombination, gene mapping using data.	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		(B) **Variations** 1. Sampling of human height, weight and BMI for continuous variation 2. Sampling for discrete characterstics (dominant vs recessive) for discontinuous variations e.g. hitch-hiker's thumb, dexterity, tongue rolling, ear lobe (data categorization into 16 groups based on the combination of 4 traits; assigning each subject to the respective group)	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
	Assignment	**Previous years question papers.**	B.Sc. (H) Zoology Semester IV	**Comparative anatomy of Vertebrates**
	Assignment	**Any topic from syllabus**	B.Sc. Life Sciences Semester IV	**Genetics and Evolutionary Biology**
			B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
	Mid Term Test	**Circulatory system, Urinogenital System, Respiratory System, Integumentary System**	B.Sc. (H) Zoology Semester IV	**Comparative anatomy of Vertebrates**
		Unit 6, Unit 9, Unit 10	B.Sc. Life Sciences Semester IV	**Genetics and Evolutionary Biology**
		Unit 5 & 6	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
April	**Theory:**	**Unit 7: Nervous System** - Spinal cord, Cranial nerves in mammals **Unit 8: Sense Organs** - Classification of receptors - Brief account of visual and auditory receptors in man	B.Sc. (H) Zoology Semester IV	**Comparative anatomy of Vertebrates**

		Revision of some numericals and doubt sessions	B.Sc. Life Sciences Semester IV	**Genetics and Evolutionary Biology**
		Unit 9 Evolution of Plants and Fungi Origin of land plants – Terrestrial algae and Bryophytes; alternation of generations.	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**
	Practicals:	5. Pedigree analysis of some human inherited traits. Instructions on Visit to natural history museum and submission of report. Mock pracs and revision	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		5. Pedigree analysis of some human inherited traits. Instructions on Visit to natural history museum and submission of report. Mock pracs and revision	B.Sc. Life Sciences Semester IV Batch III	**Genetics and Evolutionary Biology**
		(E) Phylogeny 1. Digit reduction in horse phylogeny (study from chart), 2. Study of horse skull to illustrate key features in equine evolution 3. Study of monkey and human skull - A comparison to illustrate common primate and unique Hominin features Mock pracs and revision.	B.Sc. Biological Science Semester VI	**Concepts of Evolutionary Biology**

SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
January-May, 2020

Name of the Faculty: Dr. Preeti Khandelwal
Department: Zoology
Semester: Even – II, IV and VI

Subjects:

THEORY: B.Sc. (Hons) Zoology, Sem II: **Non- Chordata: Coelomates**
B.Sc. (Hons) Sem IV: **GE: Aquatic Biology,**
B.Sc. (Hons) Zoology, Sem II **Biochemistry of Metabolic Processes**

PRACTICAL: B.Sc (P) Life Sciences, Sem IV**:SEC: Aquarium Fish Keeping**
B.Sc. (Hons) Zoology, Sem II: **Cell Biology**
B.Sc (P) Life Sciences, Sem VI: **Immunology**

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**Unit 2: Freshwater Biology** Physico-chemical Characteristics of lakes, Light, Temperature, Dissolved solids, carbonate, bicarbonate, phosphates and nitrates, Turbidity, Dissolved gases (oxygen and carbon dioxide)	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 4: Protein Metabolism Catabolism of amino acids; Transamination, deamination, Urea cycle; Fate of C-skeleton of Glucogenic and Ketogenic amino acids	B.Sc (Hons.) Zoology (Semester IV, 2nd year)	**CCX /Biochemistry of Metabolic Processes**
		Unit 1: Introduction to Public health and hygiene Significance of Public health and hygiene, nutrition and health , classification of foods, major nutritional deficiency diseases-protein energy malnutrition (kwashiorkor and marasmus) **Unit2:Environment and Health Hazards** Environmental degradation, environmental pollution- air, water, soil and noise: associated health hazards	B.Sc Life Sciences Sem VI (Batch 3)	**SEC: Public Health and Hygiene**
	Practical:	-Biology of endemic and exotic aquarium fishes -Biology of Freshwater and marine fishes -Guidelines of aquarium -Cleaning of aquarium, siphoning	B.Sc Life Sciences Sem IV (Batch 2)	**SEC/ Aquarium fish keeping**
		Preparation of temporary stained squash of onion root tip to study various stages of mitosis **Repeat** Preparation of temporary stained squash of onion root tip to study various stages of mitosis	B.Sc. (Hons.) Zoology Sem II TZH	**CC IV/ Cell Biology**

		To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc Life Sciences Sem VI(Batch 3)	**DSE /Immunology**
February	**Theory:**	Unit 2: Freshwater Biology Nutrient cycles in lakes – Nitrogen, Sulphur and Phosphorous. Streams- Different stages of stream development, physic-chemical environment, Adaptation of Hill Stream fishes. Unit 3: Marine Biology Salinity and Density of water, continental shelf, Adaptations of deep sea organisms, coral reefs, sea weeds.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism B-oxidation and ω-oxidation of saturated fatty acids with even and odd number of carbon atoms; ketogenesis	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
		Unit 1: vitamin deficiency disorders, Iron Deficiency disorders, iodine deficiency disorders **Unit 3: Communicable diseases** Different types of communicable diseases and their control measures- Tuberculosis, measles, dengue, leprosy	B.Sc Life Sciences Sem VI (Batch 3)	**SEC: Public Health and Hygiene**
	Practical	Types and composition of fish feed Preparation of fish feed in the lab Setting up of an aquarium in the lab Techniques for fish handling and packaging	B.Sc Life Sciences Sem IV (Batch 2)	**SEC/ Aquarium fish keeping**
		Study of various stages of meiosis. Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells.	B.Sc. (Hons.) Zoology Sem II	CC IV/ **Cell Biology**
		Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis	B.Sc Life Sciences Sem VI(Batch 3)	DSE / **Immunology**
March	**Theory:**	Unit 4: Management of Aquatic Resources Causes of pollution: Agricultural, Industrial, sewage, thermal and oil spills, eutrophication, Management and conservation (legislation), sewage treatment, water quality assessment: BOD and COD	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism Biosynthesis of Palmitic acid. **Unit 1: Overview of Metabolism** Catabolism vs Metabolism, shuttle systems and membrane transporters;	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
		Unit 4: Life style related non-communicable diseases Different types of Life style related non-communicable diseases- Hypertension, Coronary Heart diseases, stroke, diabetes	B.Sc Life Sciences Sem VI (Batch 3)	**SEC: Public Health and Hygiene**

		mellitus, Obesity and mental-ill health- their causes and prevention through dietary and lifestyle modifications		
	Practicals	-Potential of aquarium fish farm as cottage industry Field trip to aquarium shop	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**
		Preparation of permanent slide to demonstrate: i DNA by Feulgen reaction ii Mucopolysaccharides by PAS reaction	B.Sc. (Hons.) Zoology Sem II	**CCIV/ Cell Biology**
		Study of lymphoid organs: spleen, thymus, lymph nodes. Preparation of stained blood film.	B.Sc Life Sciences Sem VI(Batch 3)	**Immunology**
	Assignment	Coral Reefs, Sea weeds, Eutrophication, Sewage treatment, thermal and oil spill.	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Life style Disorders and their dietary prevention	B.Sc Life Sciences Sem VI(Batch 3)	**SEC: Public Health and Hygiene**
	Mid Term Test	Unit: 4: Management of Aquatic resources	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Unit 3: Lipid Metabolism Unit 4: Protein Metabolism	B.Sc (Hons.) Zoology (Semester IV)	**CCX /Biochemistry of Metabolic Processes**
April	**Theory**	Revision	B.Sc (Hons.) Semester IV	**GE IV/ Aquatic Biology**
		Revision	B.Sc (Hons.) Zoology (Semester IV, 2nd	**CCX /Biochemistry of Metabolic**
		Unit 5: **Social Health Problems** Smoking, Alcoholism, Drug Dependence and acquired immune deficiency syndrome (AIDS)- their causes, treatment and prevention	B.Sc Life Sciences Sem VI(Batch 3)	**SEC: Public Health and Hygiene**
	Practical	- Evaluation of Practical File and Report Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Sem IV(Batch 2)	**SEC/ Aquarium fish keeping**
		Preparation of permanent slide to demonstrate: i DNA and RNA by MGP ii Proteins by Mercurobromophenol blue/ Fast Green Repetition of all experiments Conduct of Mock examination	B.Sc. (Hons.) Zoology Sem II TZH	**CCIV/ Cell Biology**
		Evaluation of Practical File Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Sem VI(Batch 3)	**DSE / Immunology**

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-May, 2021

Name of the Faculty: Dr. Sadqua Shameem

Department:Zoology

Semester: II / IV / VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory:**	Unit 6: Direct Evidences of Evolution - Types of fossils, incompleteness of fossil record, dating of fossils.	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Unit 2: Historical review of evolutionary concept: Lamarckism , Darwinism .	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
		Unit 3: Patterns of Behaviour- Learning: Associative learning, classical and operant conditioning, Habituation, Imprinting	B.Sc. (Hons.) Biological Science Sem VI	**DSE-5:** Animal Behaviour and Chronobiology
		Unit 1: Introduction to Wild Life Values of wild life – positive and negative; Conservation ethics;	B.Sc. (Hons.) Zoology Sem VI	**DSE 11** Wild Life Conservation and Mannagement
	Practicals:	Study of human karyotype - Study of Homology and analogy *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		-Biology of endemic and exotic aquarium fishes -Biology of Freshwater and marine fishes Guidelines of aquarium -Cleaning of aquarium, siphoning	B.Sc. Life Sciences Sem IV	**LS SEC-2** Aquarium Fish Keeping

		-To study nests and nesting habits of the birds and social insects. -To study different types of animal behavior such as habituation, social life, courtship behavior in insects, and parental care from short videos/movies and prepare a short report.	B.Sc. (Hons.) Biological Science Sem VI	**DSE-5:** Animal Behaviour and Chronobiology
FEBRAURY	**Theory:**	Unit 8: Species Concept Biological species concept (advantages and limitations), modes of speciation	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Historical review of evolutionary concept: Neo-Darwinism **Unit-4** Sources of variations: Heritable variations and their role in evolution	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
		Unit 3: Patterns of Behaviour- Orientation: Primary and secondary orientation; kinesis-orthokinesis, klinokinesis; taxis-tropotaxis and klinotaxis, menotaxis (light compass orientation).	B.Sc. (Hons.) Biological Science Sem VI	**DSE-5**: Animal Behaviour and Chronobiology
		Unit 1: Introduction to Wild Life Importance of conservation; Causes of depletion; World conservation strategies **Unit 4:Population estimation** Population density,	B.Sc. (Hons.) Zoology Sem VI	**DSE 11** Wild Life Conservation and Mannagement
	Practicals:	Study of Mendelian Inheritance - Study of Linkage (numericals) - Study of Mendelian Inheritance (Chi square test) *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		-Types and composition of fish feed -Preparation of fish feed in the lab -Setting up of an aquarium in the lab Techniques for fish handling and packaging	B.Sc Life Sciences Sem IV (Batch 2)	**LS-SEC2/** Aquarium fish keeping

		-To study the behavioural responses of wood lice to dry condition. -To study the behavioural responses of wood lice to humid conditions.	B.Sc. (Hons.) Biological Science Sem VI	**DSE-5:** Animal Behaviour and Chronobiology
	Assignment	Separate questions will be given to students from previous year question paper.		
		Separate questions will be given to students from previous year question paper.		
		Separate questions will be given to students from previous year question paper.		
		Separate questions will be given to students from previous year question paper.		
MARCH	**Theory:**	Unit 9: Macro-evolution Macro-evolutionary principles (example: Darwin's Finches)	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Unit-3 Three domains of life, **Unit 1:**Life's Beginnings: Chemogeny, RNA world, Biogeny, Origin of photosynthesis, Evolution of eukaryotes	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
		Unit 3: Patterns of Behaviour- Reflexes: Types of reflexes, reflex path ,Characteristics of reflexes (latency, after discharge, summation, fatigue, inhibition)	B.Sc. (Hons.) Biological Science Sem VI	DSE-5: Animal Behaviour and Chronobiology
		Unit 4:Population estimation Natality, Birth rate, Mortality, fertility schedules and sex ratio computation; **Unit 3:Management of habitats** Settingback succession; Grazing logging; Mechanical treatment; Advancing the successional process;	B.Sc. (Hons.) Zoology Sem VI	**DSE 11** Wild Life Conservation and Mannagement **WILDLIFECON**

	Practicals:	Pedigree analysis - Study of linkage, recombination and gene Mapping *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Potential of aquarium fish farm as cottage Industry - Virtual Field trip to aquarium shop	B.Sc Life Sciences Sem IV (Batch 2)	**LS-SEC2/** Aquarium fish keeping
		-To study geotaxis behaviour in earthworm. -To study the phototaxis behaviour in insect larvae. -Virtual tour of 'Aravalli Biodiversity Park'	B.Sc. (Hons.) Biological Science Sem VI	**DSE-5:** Animal Behaviour and Chronobiology
	<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Biological Science Sem - II	**BS – 4** BIODIVERSITY
		Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Sem II	**GE II/** HUMAN PHYSIOLOGY
		Test questions in DU exam pattern of covered topics	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY
APRIL	**Theory**	Unit 6: Direct Evidences of Evolution Phylogeny of horse	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
		Unit 4: Sources of variations: Heritable variations and their role in evolution	B.Sc. (Hons.) Zoology Sem VI	**Core Course-XIV** EVOLUTIONARY BIOLOGY
		Unit 3: Patterns of Behaviour- Characteristics of reflexes and its comparison with complex behavior.	B.Sc. (Hons.) Biological Science Sem VI	DSE-5: Animal Behaviour and Chronobiology
		Unit 3:Management of habitats Cover construction; Preservation of general genetic diversity	B.Sc. (Hons.) Zoology Sem VI	**DSE 11** Wild Life Conservation and Mannagement

Practicals:	-Hardy-Weinberg law - Mock Test - Revision - Practice of Numericals *With continuous evaluation* Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem IV	**Core Course-IV** GENETICS AND EVOLUTIONARY BIOLOGY
	- Evaluation of Practical File and Report Practice and repetition of practical Conduct of Mock examination.	B.Sc Life Sciences Sem IV (Batch 2)	**LS-SEC2/** Aquarium fish keeping
	-Revision/Mock test	B.Sc. (Hons.) Biological Science Sem VI	**DSE-5:** Animal Behaviour and Chronobiology

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-May,2021

Name of the Faculty: Dr. AARTI SEHERAWAT

Department: Zoology

Semester: Even (II,IV,VI)

Month		Topics	Course	Paper Code/Name
January	**Theory:**	**UNIT 1: Integumentary System** - **Structure of Integument** - **Soft Derivatives**	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**
		UNIT 10: Early embryonic development - **Gametogenesis**	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**
		Unit 2: Cells and Organs of Immune System - **Hematopoiesis**	**BSc. Life Science VI Sem**	**DSE II Immunology**
		UNIT 1: Introduction to evolutionary theories - **Lamarckism** - **Pre-Darwinism** - **Darwinism**	**BSc. Biological Science VI Sem**	**Concepts of Evolutionary Biology: C 14**
	Practicals:	- **Protein estimation by Lowry's method** - **Trace the labeled C atoms in TCA cycle**	**BSc. Zoology Hons. IV Sem**	**Biochemistry of Metabolic Processes: CCX**
		- **Study of human karyotype** - **Study of Homology and analogy**	**BSc. Life Science IV Sem (Batch I)**	**Genetics and Evolutionary Biology: CCIV**
		- **Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science, Importance of Referencing and Understanding of Plagiarism and Tools, Types of Reference**	**BSc. Zoology Hons. IV Sem**	**Research Methodology**
February	**Theory:**	**UNIT 1: Integumentary System** - **Function** - **Hard Derivatives**	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**
		UNIT 1: Introduction to evolutionary theories - **Neo-Darwinism** - **Modern Synthetic theory** **Unit 2: Chemogeny**	**BSc. Biological Science VI Sem**	**Concepts of Evolutionary Biology: C 14**
		UNIT 2: Early embryonic development - **Types of eggs** - **Egg membranes**	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**

		Unit 2: Cells and Organs of Immune System - **Cells of Immune System** - **Structure of MHC**	**BSc. Life Science VI Sem**	**DSE II Immunology**
	Practicals:	- **Study of Biological Oxidation(SDH)** - **Study of enzymatic activity of Trypsin** - **Study of enzymatic activity of Lipase**	**BSc. Zoology Hons. IV Sem**	**Biochemistry of Metabolic Processes: CCX**
	Practicals:	- **Study of Mendelian Inheritance** - **Study of Linkage (numericals)** - **Study of Mendelian Inheritance (Chi square test)**	**BSc. Life Science IV Sem (Batch I)**	**Genetics and Evolutionary Biology : CCIV**
		- **Exercises related to Plagiarism, Learning usage of Endnote and other similar softwares, Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation**	**BSc. Zoology Hons. IV Sem**	**Research Methodology**
March	**Theory:**	**UNIT 3: Digestive System** - **Comparative account of alimentary canal** - **Associated glands (liver, pancreas, gall bladder)**	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**
		UNIT 4: Sources of evolution - **Types of Variation** - **Gene mutation** - **Chromosomal aberrations**	**BSc. Biological Science VI Sem**	**Concepts of Evolutionary Biology: C 14**
		UNIT 2: Early embryonic development - **Fertilization** - **Changes in gametes** - **Cleavage**	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**
		Unit 2: Cells and Organs of Immune System - **Organs of Immune System**	**BSc. Life Science VI Sem**	**DSE II Immunology**
	Practicals	- **To perform Acid Phosphatase assay** - **To perform Alkaline Phosphatase assay** - **To perform SGPT** - **To perform SGOT**	**BSc. Zoology Hons. IV Sem**	**Biochemistry of Metabolic Processes: CCX**
		- **Pedigree analysis** - **Study of linkage, recombination and gene mapping**	**BSc. Life Science IV Sem (Batch I)**	**Genetics and Evolutionary Biology : CCIV**
		- **Troubleshooting related to analysis of survey and proposal**	**BSc. Zoology Hons. IV Sem**	**Research Methodology**
	Assignment	- **Last two years question papers**	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**
	Assignment	- **Variation as raw materials for evolution** - **Types of variations**	**BSc. Biological Science VI Sem**	**Concepts of Evolutionary Biology: C 14**
	Mid Term Test	**UNIT 1: INTEGUMENTARY SYSTEM**	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**
April	**Theory:**	**UNIT 3: Digestive System** - **Comparative account** - **Dentition**	**BSc. Zoology Hons. IV Sem**	**Comparative anatomy of Vertebrates: CCVIII**

		UNIT 9: Evolution of Plant and Fungi - **Revision**	**BSc. Biological Science VI Sem**	**Concepts of Evolutionary Biology: C 14**
		UNIT 5: Structure and function of MHC - **Antigen Presentation and Processing**	**BSc. Life Science VI Sem**	**DSE II Immunology**
		UNIT 2: Types of Blastula	**BSc. Zoology Hons. VI Sem**	**Developmental Biology CCXIII**
	Practicals:	- **Mock Test** - **Revision**	**BSc. Zoology Hons. IV Sem**	**Biochemistry of Metabolic Processes: CCX**
		- **Hardy-Weinberg law** - **Mock Test** - **Revision** - **Practice of Numericals**	**BSc. Life Science IV Sem (Batch III)**	**Genetics and Evolutionary Biology : CCIV**
		- **Survey and Proposal submission, viva for practical exams**	**BSc. Zoology Hons. IV Sem**	**Research Methodology**
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SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
April-July, 2021

Name of the Faculty: Mrs. Himani Khurana
Department: Zoology
Semester: Even – II

Subjects:
THEORY: B.Sc. (H) Zoology, Semester II: **Non-Chordates II: Coelomates, Cell Biology, GE: Human Physiology**
B. Sc. (P) Life Sciences, Semester II: **Comparative Anatomy and Developmental Biology of Vertebrates**
B.Sc. (H) Biological Sciences, Semester II: **Biodiversity**
PRACTICAL: B.Sc. (H) Zoology, Semester II: **GE: Human Physiology**
B.Sc. (H) Biological Sciences, Semester II: **Biodiversity**

Month		Topics	Course	Paper Code/Name
April	**Theory:**	**Unit 5: Mollusca** General characteristics	B.Sc. (H) Zoology, Semester II	**CC III/ Non-Chordates II: Coelomates**
		Unit 2: Plasma Membrane Various models of plasma membrane structures	B.Sc. (H) Zoology, Semester II	**CC IV/Cell Biology**
		Unit 1: Digestion and Absorption of Food Structure and function of digestive system	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Unit 11: Late Embryonic Development Metamorphic events in life cycle of frog and its hormonal regulation	B. Sc. (P) Life Sciences, Semester II	**C II/ Comparative Anatomy and Developmental Biology of Vertebrates**
		Unit I: Defining Biodiversity Components of Biodiversity, Biodiversity crisis and biodiversity loss, Importance of biodiversity in daily life Introduction to animal diversity, Whittaker"s five kingdom classification, Systematic classification and general features of chordates and non chordates (Protista, Porifera). Principles of taxonomy, Linnaean system of classification, Binomial nomenclature, Species concepts	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
	Practical:	**Experiment 1:** Preparation of temporary mounts: Neurons and Blood film	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Experiment 1: Fauna Study of following specimens: *Euglena*, *Paramecium*, *Sycon*	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**

May	**Theory:**	**Unit 5: Mollusca** Classification up to classes; Respiration in Mollusca	B.Sc. (H) Zoology, Semester II	**CC III/ Non-Chordates II: Coelomates**
		Unit 2: Plasma Membrane Transport across membranes: active and passive transport, facilitated transport; Cell-cell junctions, structures and functions: Tight junctions, adherens junctions, gap junctions	B.Sc. (H) Zoology, Semester II	**CC IV/Cell Biology**
		Unit 1: Digestion and Absorption of Food Digestion and absorption of carbohydrates, fats and proteins; Nervous and hormonal control of digestion (in brief)	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Unit 11: Late Embryonic Development Implantation of embryo in human	B. Sc. (P) Life Sciences, Semester II	**C II/ Comparative Anatomy and Developmental Biology of Vertebrates**
		Unit I: Defining Biodiversity Systematic classification and general features of chordates and non chordates (Cnidaria, Platyhelminthes, Aschelminthes, Annelida, Arthropoda)	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
	Practical:	**Experiment 2:** Preparation of haemin and haemochromogen crystals **Experiment 3:** Demonstration of haemoglobin using Sahli's haemoglobinometer Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Experiment 1: Fauna Study of following specimens: *Tubipora Taenia*, *Ascaris*, *Aphrodite*, *Leech*, *Peripatus*, *Limulus*, *Hermitcrab*, *Beetle* **Experiment 2:** Dissections/ Virtual demonstration: Digestive and nervous system of Cockroach; Unstained mount of Placoid scales Evaluation of record file and discussion in the class	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
June	**Theory:**	**Unit 5: Mollusca** Torsion and detorsion in Gastropoda; Pearl formation in bivalves	B.Sc. (H) Zoology, Semester II	**CC III/ Non-Chordates II: Coelomates**

		Unit 4: Mitochondria Structure, Semi-autonomous nature, Endo-symbiotic hypothesis; Respiratory chain, Chemiosmotic hypothesis and ATP Synthase **Unit 5: Cytoskeleton** Structure and Functions: Microtubules and Intermediate filaments	B.Sc. (H) Zoology, Semester II	**CC IV/Cell Biology**
		Unit 5: Cardiovascular System Structure of heart; Coordination of heartbeat; Cardiac cycle and ECG	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Unit 11: Late Embryonic Development Formation, types and functions of placenta in mammals	B. Sc. (P) Life Sciences, Semester II	**C II/ Comparative Anatomy and Developmental Biology of Vertebrates**
		Unit I: Defining Biodiversity Systematic classification and general features of chordates and non chordates (Mollusca, Echinodermata, Protochordata)	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
	Practical:	**Experiment 4:** Examination of permanent histological sections of mammalian, stomach, lung, kidney, thyroid, pancreas, testis, ovary Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
		Experiment 1: Fauna Study of following specimens: *Pila*, *Chiton*, *Dentalium*, *Octopus*, *Asterias* **Experiment 3:** Study of following specimens: *Balanoglossus*, *Amphioxus* **Experiment 4:** Study of a few endangered species of amphibians, reptiles, birds and mammals of India **Experiment 6:** Report on: Biodiversity park/reserve/ NBPGR Evaluation of record file and discussion in the class	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
	Continuous Evaluation:	Tests will be taken from the practical exercises in order to make the students understand the concept thoroughly and in the process, they will be able to learn the exercises and get doubts resolved	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
July	**Theory:**	**Revision**	B.Sc. (H) Zoology, Semester II	**CC III/ Non-Chordates II: Coelomates**

	Unit 6: Nucleus Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Transport of molecules across nuclear membrane, Chromatin: euchromatin, heterochromatin and packaging, nucleosome, nucleolus	B.Sc. (H) Zoology, Semester II	**CC IV/Cell Biology**
	Unit 2: Functioning of Excitable Tissue (Nerve and Muscle) Structure of neuron and brief introduction of neuroglia; Propagation of nerve impulse (myelinated and non-myelinated nerve fibre); Structure of skeletal muscle; Mechanism of muscle contraction (Sliding filament theory); Neuromuscular junction	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
	Unit 12: Applied Aspects of Developmental Biology Stem cells, Cloning, IVF	B. Sc. (P) Life Sciences, Semester II	**C II/ Comparative Anatomy and Developmental Biology of Vertebrates**
	Unit I: Defining Biodiversity Systematic classification and general features of chordates and non chordates (Osteichthyes, Amphibia, Reptilia, Aves and Mammals)	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
Practical:	**Experiment 5:** Determination of ABO Blood group **Experiment 6:** Recording of blood pressure using a Sphygmomanometer in resting condition Evaluation of record file and discussion in the class	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
	Experiment 3: Study of following specimens: *Petromyzon*, *Pristis*, *Hippocampus*, *Labeo*, *Icthyophis*/*Uraeotyphlus*, *Salamander*, *Draco*, *Naja*, any three common birds, Bat **Experiment 5:** To study faunal composition of water samples (Lucky drop method) Evaluation of record file and discussion in the class	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**
Mid Term Test:	A test will be conducted from the units covered so that the students are able to learn the concepts thoroughly	B.Sc. (H) Zoology, Semester II	**CC IV/Cell Biology**
Assignment:	Students will be asked to make assignment on the following topic "Structure of Nucleus: Nuclear envelope, Nuclear pore complex"	B.Sc. (H) Zoology, Semester II	**CC IV/Cell Biology**

	which will allow them to delve deep and understand the topic in detail		
Mock Practical Test:	Mock test will be conducted to make the students well versed with the practical exercises and confident for the final practical examination Checking of complete practical file	B.Sc. (H) Zoology, Semester II	**GE: Human Physiology**
Mock Practical Test:	Mock test will be conducted to make the students well versed with the practical exercises and confident for the final practical examination Checking of complete practical file	B.Sc. (H) Biological Sciences, Semester II	**BS C4/Biodiversity**

SEMESTER WISE TEACHING PLAN (2020-2021)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Nawaz Alam Khan **Department: Zoology**

Semester: II (Even Semester)

Month		Topics	Course	Paper Code/Name
APRIL (2021)	**Theory**	**Unit 3: Arthropoda:** General characteristics and Classification up to classes.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Unit 1: Overview of Cells: Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 2: Skeletal System: Overview of skeleton: Brief account of jaw suspensorium and visceral arches.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
		Unit 6: Endocrine and Reproductive Physiology: Brief account of spermatogenesis and oogenesis; Menstrual cycle.	GE II: Zoology	Human Physiology **(32235907_OC)**
	Practicals	Study of *Pentaceros/Asterias, Ophiura, Clypeaster, Echinus, Cucumaria, Antedon.*	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Disarticulated skeleton of fowl and rabbit.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates

MAY (2021)	**Theory:**	**Unit 3: Arthropoda:** Classification of Insecta up to orders, Respiration in Arthropoda, Social life in bees and termites.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Unit 3: Endomembrane System: Structure and Functions: Endoplasmic Reticulum, Signal hypothesis, Vesicular transport from ER to Golgi apparatus.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 6: Urinogenital System: Succession of kidney, Evolution of urinogenital ducts.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
		Unit 6: Endocrine and Reproductive Physiology: Structure and function of endocrine glands and related disorders (pituitary, thyroid, parathyroid, pancreas, adrenal, ovaries, and testes).	GE II: Zoology	Human Physiology **(32235907_OC)**
	Practicals:	Study of *Chiton, Dentalium, Pila, Doris, Helix, Unio, Patella,Ostrea, Pinctada, Sepia, Octopus, Nautilus.*	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Carapace and plastron of turtle, Mammalian skulls: one herbivorous and one carnivorous animal.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
	Assignment:	Project report on "In Vitro Fertilization (IVF)"	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates

JUNE (2021)	**Theory:**	**Unit 3: Arthropoda:** Vision in Arthropoda; Metamorphosis in Insects.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Unit 2: Annelida: General characteristics and Classification up to classes.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Unit 3: Endomembrane System: Protein sorting and transport from Golgi apparatus; Golgi apparatus, Vesicular transport.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 8: Sense Organs: Types of receptors, Visual receptors in man.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
		Unit 3: Respiratory Physiology: Structure and function of respiratory tract and Lungs; Ventilation, External and internal respiration; Transport of oxygen and carbon dioxide in blood; Factors affecting transport of gases.	GE II: Zoology	Human Physiology **(32235907_OC)**
	Practicals:	Study of *Aphrodite, Nereis, Heteronereis, Sabella, Serpula, Chaetopterus, Pheretima, Hirudinaria,* Trochophore larva, Study of T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Frog - Study of developmental stages - whole mounts and sections through permanent slides - cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
	Assignment:	Respiration in Arthropoda	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201**

JULY (2021)	**Theory:**	**Unit 2: Annelida:** Digestion, Excretion and Reproduction in Annelida.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Unit 3: Endomembrane System: Coated Vesicles; Lysosomes; Peroxisomes.	B.Sc. (Hons) Zoology, Semester-II	Cell Biology **(32231202)**
		Unit 1: Integumentary System: Structure and function of integument, Derivatives of integument (glands).	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
		Unit 4: Renal Physiology: Functional anatomy of kidney; Mechanism and regulation of urine formation.	GE II: Zoology	Human Physiology **(32235907_OC)**
	Practicals:	Study of *Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta,* termites, *Apis, Musca*, Crustacean larvae (Any three), Study of *Peripatus*, Study of mouth parts, digestive system and nervous system of *Periplaneta*.	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Study of the different types of placenta- histological sections through permanent slides or photomicrograph, study of rat sperm.	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
	Test:	Mock test (full syllabus).	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Internal assessment test (Unit 3: Arthropoda).	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Mock test (full syllabus).	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
		Internal assessment test (Unit 3: Respiratory Physiology, Unit 6: Endocrine and Reproductive Physiology).	GE II: Zoology	Human Physiology **(32235907_OC)**

	Assignment:	Project report on study of the social behaviour of any insect (bees/termites/ants/ wasps). Regulation of tubular reabsorption and secretion.	B.Sc. (Hons) Zoology, Semester-II GE II: Zoology	Non-Chordates II: Coelomates (**32231201)** Human Physiology **(32235907_OC)**

AUGUST (2021)	**Theory:**	Revision	B.Sc. (Hons) Zoology, Semester-II	Non-Chordates II: Coelomates (**32231201)**
		Revision	B.Sc. Life Sciences, Semester-II	Comparative Anatomy and Developmental Biology of Vertebrates
		Revision	GE II: Zoology	Human Physiology **(32235907_OC)**

SEMESTER WISE TEACHING PLAN (2020-21)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Mr. Amarjeet Singh **Department:** Zoology

Semester: Even II/IV/VI: II

Month & Year		Topics	Course	Paper Code/Name
APRIL, 2021	**Theory:**	**Unit 1: Introduction to Coelomates:** Evolution of coelom and metamerism	B.Sc. (H) Zoology IInd Semester	ZH Core-III Non-Chordates II: Coelomates
		Unit 4: Onychophora: General characteristics	B.Sc. (H) Zoology IInd Semester	ZH Core-III Non-Chordates II: Coelomates
		Unit 7: Cell division: Basics of mitosis and meiosis	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology
		Unit 2: Modern Tools in the study of Biodiversity: Endemism, Endemic animals, Assessment and mapping of biodiversity	B.Sc. (H) Biological Sciences IInd Semester	BS C-4: Biodiversity
		Unit 9: Scope and History of Developmental Biology: Concepts of epigenesis and preformation, Specification, Determination, Differentiation, Morphogenesis	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practicals:	**Exercise No. 1:** Basics of microscopy **Exercise No. 2:** Principle of Light microscopy and Phase Contrast microscopy **Exercise No. 3:** Principle of Electron microscopy	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology
		Exercise No. 1: To study the disarticulated skeleton of fowl **Exercise No. 2:** To study the disarticulated skeleton of rabbit **Exercise No. 3:** Carapace and plastron of turtle	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates

MAY, 2021	**Theory:**	**Unit 4: Onychophora:** General characteristics and Evolutionary significance	B.Sc. (H) Zoology II[nd] Semester	ZH Core-III Non-Chordates II: Coelomates
		Unit 6: Echinodermata: General characteristics and classification up to classes	B.Sc. (H) Zoology II[nd] Semester	ZH Core-III Non-Chordates II: Coelomates
		Unit 7: Cell division: Basics of Cell Cycle, Regulation of Mitosis phase transition, Regulation of Oocyte meiosis, Basics of cell cycle regulation	B.Sc. (H) Zoology II[nd] Semester	ZH Core IV: Cell Biology
		Unit 2: Modern Tools in the study of Biodiversity: Remote sensing, GIS, Biodiversity conservation, IUCN	B.Sc. (H) Biological Sciences II[nd] Semester	BS C-4: Biodiversity
		Unit 9: Scope and History of Developmental Biology: Embryonic induction **Unit 10: Early Embryonic development:** Gametogenesis, Spermatogenesis and Oogenesis in mammals; External Fertilization (amphibians), Blocking mechanisms to Polyspermy	B.Sc. (P) Life Sciences II[nd] Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practicals:	**Exercise No. 4:** To study the principle of cell fixation and staining **Exercise No. 5:** To study the principle of fractionation **Exercise No. 6:** Preparation of temporary stained squash of onion root tip to study various stages of mitosis	B.Sc. (H) Zoology II[nd] Semester	ZH Core IV: Cell Biology
		Exercise No. 4: The study of skull of one herbivorous mammal and one carnivorous mammal **Exercise No. 5:** To study the developmental stages of frog through permanent slides (from cleavage stages till neurula stage)	B.Sc. (P) Life Sciences II[nd] Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates

JUNE, 2021	**Theory:**	**Unit 6: Echinodermata:** Classification up to classes, Water-vascular system in Asteroidea	B.Sc. (H) Zoology IInd Semester	ZH Core-III Non-Chordates II: Coelomates
		Unit 7: Cell division: Cdk activities and it's regulation, DNA damage checkpoints	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology
		Unit 2: Modern Tools in the study of Biodiversity: Germplasm banks, National Parks and Wildlife Sanctuaries, Botanical gardens, Sacred fauna	B.Sc. (H) Biological Sciences IInd Semester	BS C-4: Biodiversity
		Unit 10: Early Embryonic Development: Internal fertilization (mammals) and blocking mechanism to polyspermy, Types and patterns of cleavage, Types of morphogenetic movements, Early development of frog and human (up to formation of gastrula), Fate maps, Fate of germ layers **Unit 3: Digestive system:** Brief Introduction to digestive tract and Buccal Cavity	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practicals:	**Exercise No. 7:** To study the effect of colchicine on mitosis (polyploidy in onion root tip) **Exercise No. 8:** Preparation of temporary mount of the grasshopper testes to study various stages of meiosis **Exercise No. 9:** Preparation of temporary stained slide to show the presence of Barr body in human female blood cells/cheek cells **Exercise No. 10:** To cytochemically demonstrate the presence of DNA in onion peel using Feulgen reaction	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology

		Exercise No. 6: To study the developmental stages of frog through permanent slides (tail bud stage, tadpole external and internal gill stages **Exercise No. 7:** To study the different types of placenta through permanent slides or photomicrograph **Exercise No. 8:** To study the structure of rat sperm	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	<u>Assignment</u>	• Assignment will be given from the syllabus. • A list of assignment topics is given below: (a). External fertilization and polyspermy blocking mechanisms (b). Internal fertilization and slow block to polyspermy	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
JULY, 2021	**Theory:**	**Unit 6: Echinodermata:** Larval forms in Echinoderms, Protective mechanisms in Echinoderms (Dermal skeleton, evisceration, autotomy)	B.Sc. (H) Zoology IInd Semester	ZH Core-III Non-Chordates II: Coelomates
		Unit 7: Cell Signalling: Introduction to Cell Signalling, Cell signalling through G-protein coupled receptor (GPCR) and role of secondary messenger: cAMP and protein kinase; Apoptosis	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology
		Unit 2: Modern Tools in the study of Biodiversity: Bioremediation, Biomass utilization, Bioethics	B.Sc. (H) Biological Sciences IInd Semester	BS C-4: Biodiversity

		Unit 3: Digestive System: Brief account of alimentary canal and digestive glands **Unit 4: Respiratory System:** Brief account of gills, lungs, air sacs and swim bladder **Unit 5: Circulatory System:** Evolution of heart and aortic arches **Unit 7: Nervous System:** Comparative account of brain	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practicals:	**Exercise No. 11:** To cytochemically demonstrate the presence of mucopolysaccharides in onion peel using Periodic Acid Schiff (PAS) reaction **Exercise No. 12:** To cytochemically demonstrate the presence of proteins in cheek cells by mercurobromophenol blue/fast green • Revision of experiments through open book activities	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology
		Exercise No. 9: Discussion on In Vitro Fertilization (IVF) technique through power-point presentation by students • Revision of experiments through open book activities	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	<u>Mid Term Test</u>	A mid-term test will be kept in July, 2021 which will cover the syllabus to test the grasping power of Life Sciences students. The test will be conducted for both theory paper as well as practical paper and the format can be an objective and subjective type.	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates

	<u>Mid Term Test</u>	A mid-term test will be kept in July, 2021 for cell biology practical paper to test the understanding of Zoology (H) students towards practical knowledge of subject.	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology
AUGUST, 2021	**Theory:**	**Unit 7: Nervous system** Comparative account of brain	B.Sc. (P) Life Sciences IInd Semester	LS Core II: Comparative Anatomy and Developmental Biology of Vertebrates
	Practical:	• Revision	B.Sc. (H) Zoology IInd Semester	ZH Core IV: Cell Biology

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty : Dr. S. Vivekananthan
Department : Tamil
CBCS Semester : II

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Study of Important Authors: Tamil Techniques of epics and Kaviyarangam	B.A Prog Tamil DSC	62081210
August	Theory	Study of Important Authors: Tamil life of Mudiyarsan	B.A Prog Tamil DSC	62081210
September	Theory Assignment	Study of Important Authors: Tamil Creative style of Introduction of Mudiyarasan and contemporary writers Mudiyarasan	B.A Prog Tamil DSC	62081210
October	Theory Mid-Term Test	Study of Important Authors: Tamil Mudiyarasan Kaappiya Punaithiran	B.A Prog Tamil DSC	62081210
November	Theory	Study of Important Authors: Tamil Art and Ideology of Mudiyarasan	B.A Prog Tamil DSC	62081210

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty : Dr. S. SEENIVASAN
Department : Tamil
CBCS Semester : II

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Study of Important Authors: Tamil Introduction of EVR. Periyar and contemporary Social Reformers	B.A Prog Tamil DSC	62081210
August	Theory	Study of Important Authors: Tamil Vaikkam fight	B.A Prog Tamil DSC	62081210
September	Theory Assignment	Study of Important Authors: Tamil Journalistic style of EVR Periyar Social and Political life of Periyar	B.A Prog Tamil DSC	62081210
October	Theory Mid-Term Test	Study of Important Authors: Tamil Views & Thoughts of EVR. Periyar	B.A Prog Tamil DSC	62081210
November	Theory	Study of Important Authors: Tamil Political Ideology of EVR Periyar	B.A Prog Tamil DSC	62081210

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty : Dr. S. Vivekananthan
Department : Tamil
CBCS Semester : IV

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Study of Important Texts: Nedunalvaadai Introduction of Sangam literature	B.A Prog Tamil DSC	62081436
August	Theory	Study of Important Texts: Nedunalvaadai Introduction of Sangam Literature and Nedunalvaadai	B.A Prog Tamil DSC	62081436
September	Theory Assignment	Study of Important Texts: Nedunalvaadai Life style of Forest land (Mullai) Concept of Akam and Puram	B.A Prog Tamil DSC	62081436
October	Theory Mid-Term Test	Study of Important Texts: Nedunalvaadai Nedunalvaadai in Sangam Literature	B.A Prog Tamil DSC	62081436
November	Theory	Study of Important Texts: Nedunalvaadai Expressions of the Characters and culture, custom of the people	B.A Prog Tamil DSC	62081436

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty : Dr. S. SEENIVASAN
Department : Tamil
CBCS Semester : IV

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Study of Important Texts: Kuyilpaattu Introduction of Subramania Bharathi and contemporary Poets	B.A Prog Tamil DSC	62081436
August	Theory	Study of Important Texts: Kuyilpaattu Kuyilpaattu in Barathi's Epics	B.A Prog Tamil DSC	62081436
September	Theory Assignment	Study of Important Texts: Kuyilpaattu Bharathiyin Kuyilpattu Punaithiran. Creative Style and Techniques of Kuyilpaattu	B.A Prog Tamil DSC	62081436
October	Theory Mid-Term Test	Study of Important Texts: Kuyilpaattu Views & Description of Nature in Kuyilpaattu	B.A Prog Tamil DSC	62081436
November	Theory	Study of Important Texts: Kuyilpaattu Emotions and Expressions of Characters	B.A Prog Tamil DSC	62081436

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty : Dr. S. Vivekananthan
Department : Tamil
CBCS Semester : VI

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Selected Texts: Poetry & Play : Kudumba Vilakku Life history of Bharathi Dasan and contemporary Poets	B.A Prog Tamil DSE	62087640
August	Theory	Selected Texts: Poetry & Play : Kudumba Vilakku Study of culture and customs of Tamils	B.A Prog Tamil DSE	62087640
September	Theory Assignment	Selected Texts: Poetry & Play : Kudumba Vilakku Kudumba Vilakku in Modern Epic	B.A Prog Tamil DSE	62087640
October	Theory Mid-Term Test	Selected Texts: Poetry & Play : Kudumba Vilakku Study of Characters in Kudumba Vilakku	B.A Prog Tamil DSE	62087640
November	Theory	Selected Texts: Poetry & Play : Kudumba Vilakku Expressions of the Women Characters	B.A Prog Tamil DSE	62087640

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty : Dr. S. SEENIVASAN
Department : Tamil
CBCS Semester : VI

Month	Theory/Practical	Topics	Course	Paper code/Name
July	Theory	Selected Texts: Poetry & Play : Durkkira Avalam Outline of modern street play	B.A Prog Tamil DSE	62087640
August	Theory	Selected Texts: Poetry & Play : Durkkira Avalam Durkkira Avalam in Modern Tamil Plays	B.A Prog Tamil DSE	62087640
September	Theory Assignment	Selected Texts: Poetry & Play : Durkkira Avalam Study of Characters in Durkkira avalam Character study of Durkkiran	B.A Prog Tamil DSE	62087640
October	Theory Mid-Term Test	Selected Texts: Poetry & Play : Durkkira Avalam Study of Social conflicts in Durkkira Avalam	B.A Prog Tamil DSE	62087640
November	Theory	Selected Texts: Poetry & Play : Durkkira Avalam Techniques of Tamil Play and Durkkira Avalam	B.A Prog Tamil DSE	62087640

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Geeta Jayaram Sodhi

Department: Sociology

Semester: II

Month		Topic(s)	Course	Paper Code/Name
JAN	**Theory**	1. Plurality of the SociologicalPerspective 2. Functionalism	Core Course-03	Introduction to Sociology II
	Practical	NA	NA	NA
	Tutorial	Plurality of the Sociological Perspective with regard to Theory and Research	Core Course-03	Introduction to Sociology II
FEB	**Theory**	1. InterpretiveSociology 2. Interactionism	Core Course-03	Introduction to Sociology II
	Practical	NA	NA	NA
	Tutorial	Functionalist Perspective of Society	Core Course-03	Introduction to Sociology II
MARCH	**Theory**	1. ConflictTheory 2. FeministTheory	Core Course-03	Introduction to SociologyII

	Practical	NA	NA	NA
	Tutorial	Interpretive Sociology	Core Course-03	Introduction to Sociology II
	<u>Assignment</u> **Mid Sem Exam**	Examine the Functionalist perspective of Society Topics 1 and 2	Core Course-03	Introduction to Sociology II
APRIL	**Theory**	1. Structuralism	Core Course-03	Introduction to Sociology II
	Practical	NA	NA	NA
	Tutorial	Feminist Perspective	Core Course-03	Introduction to Sociology II

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Geeta Jayaram Sodhi
Department: Sociology
Semester: IV

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	1. SociologicalResearch 2. Objectivity in Social sciences	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	What is Sociological Research ?	Core Course 4	Methods of Sociological Enquiry
FEBRUARY	**Theory**	1. Reflexivity 2. ComparativeMethod	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Comparative Method	Core Course 4	Methods of Sociological Enquiry

MARCH	**Theory**	1. Ethnographic Method 2. Theory and Research	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Ethnographic Method	Core Course 4	Methods of Sociological Enquiry
	Assignment **Mid SemExam**	What is the nature of Sociological Research? Topics 1.1 and 1.2	Core Course 4	Methods of Sociological Enquiry
APRIL	**Theory**	Constructing the Object of Research	Core Course 4	Methods of Sociological Enquiry
	Practical	NA	NA	NA
	Tutorial	Quantitative and Qualitative Methods in Research	Core Course 4	Methods of Sociological Enquiry

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Subas C Mohapatra

Department: Sociology

Semester: III

Month		Topics	Course	Paper Code/Name
JULY	**Theory**	Sociology of religion; meaning and scope	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Sociology of religion; meaning and scope	Discipline Specific Elective- 02	Religion and Society
AUGUST	**Theory**	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationalizatiom	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationalizatiom	Discipline Specific Elective- 02	Religion and Society

SEPTEMBER	**Theory**	Rites of Passage Hinduism Budhism	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Rites of Passage Hinduism Budhism	Discipline Specific Elective- 02	Religion and Society
	Assignment (10 Marks)	Sociology of Religion: Nature and scope Sacred and profane Religion and Rationalizatiom	Discipline Specific Elective- 02	Religion and Society
OCTOBER	**Theory**	Islam Jainism Sikhism Christianity	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Islam Jainism Sikhism Christianity	Discipline Specific Elective- 02	Religion and Society
	Mid-SemesterExamination (10Marks)	---------- Islam, Jainism Sikhism,Christianity		Religion and Society

NOVEMBER	**Theory**	Communalism and secularism	Discipline Specific Elective- 02	Religion and Society
	Practical	NA	NA	NA
	Tutorial	Communalism and secularism	Discipline Specific Elective- 02	Religion and Society

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Subas C Mohapatra **Department: Sociology**

Semester: I

Month		Topic(s)	Course	Paper Code/Name
JULY	**Theory**	Karl Marx Materialistic Conception of History	B.A. Programme Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Historical materialism	Core Course-03	Sociological Theories
AUGUST	**Theory**	Class and Class Struggle	Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Class and Class struggle	Core Course-03	Sociological Theories
SEPTEMBER	**Theory**	Emile Durkheim Forms of solidarity and Socialfact	Core Course-03	Sociological Theories

	Practical	NA	NA	NA
	Tutorial	Emile Durkheim Forms of Solidarity and Social fact	Core Course-03	Sociological Theories
	Assignment (10Marks)	Division of labor / Historical Materialism	Core Course-03	Sociological Theories
OCTOBER	**Theory**	Max Weber Ideal Type and Social Action	Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Max Weber Ideal Type and Social Action	Core Course-03	Sociological Theories
	Mid-SemesterExamination (10Marks)	Topics: Karl Max, E. Durkheim, Max Weber	Core Course-03	Sociological Theories
NOVEMBER	**Theory**	Max Weber on Types of Authority	Core Course-03	Sociological Theories
	Practical	NA	NA	NA
	Tutorial	Max Weber on Types of Authority	Core Course-03	Sociological Theories

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology **Semester: BA (H),**

Semester II (January-June, 2021)

Month		Topic(s)	Course	Paper Code/Name
JANUARY	**Theory**	India as an Object of Knowledge: A discursive discourse; nationalist discourse	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Reading Kaviraj and Srinivas on the nationalist and post-colonial discourses	Core Course 03 (C03)	Sociology of India II
FEBRUARY	**Theory**	Indological and ethnographic approaches to India including disciplinary history of Indian sociology; Sanskritization and mobility; Dalit movement.	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Conceptualizing Dalit identity and tracing the trajectory of Dalit movement in India.	Core Course 03 (C03)	Sociology of India II
MARCH	**Theory**	Mapping resistance in the contexts of women, peasant and ethnic movements in India; rise and growth of the Indian middle class.	Core Course 03 (C03)	Sociology of India II

	Practical	NA	NA	NA
	Tutorial	Discussion on ethnicity, nation and citizenship by exploration of the Assam movement.	Core Course 03 (C03)	Sociology of India II
	<u>Assignment (10 Marks)</u>	Write an essay on the Dalit movement in India (1200-1500 words, TNR & 12 font, 1.5 space, justified)	Core Course 03 (C03)	Sociology of India II
APRIL	**Theory**	Communalism in India; the history & growth of secularism, citizenship and identity in India.	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Mapping the debates on secularism as an ideology; problems faced by Indian secularism particularly since independence.	Core Course 03 (C03)	Sociology of India II
	<u>Mid-Semester Examination (10 Marks)</u>	Two short essays (350 words each) to be attempted on peasant and womens' movements in India.	Core Course 03 (C03)	Sociology of India II
MAY	**Theory**	Understanding the varieties of secularism in India.	Core Course 03 (C03)	Sociology of India II
	Practical	NA	NA	NA
	Tutorial	Revision of the entire syllabus depending on student feedback and demand.	Core Course 03 (C03)	Sociology of India II

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (Program), Semester VI (January-June, 2021)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing economic sociology; economy as an embedded process; substantivist and formalist approaches	Generic Elective 02 (GE 02)	Economy and Society
	Practical		NA	NA
	Tutorial	Discuss Karl Polanyi's contribution to economic sociology	Generic Elective 02 (GE 02)	Economy and Society
FEBRUARY	**Theory**	Functionalist approach in economic sociology; domestic mode of production; introduction to peasant economy	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	With reference to Marshall Sahlins define and discuss the features of domestic mode of production	Generic Elective 02 (GE 02)	Economy and Society

MARCH	**Theory**	Understanding peasant economy with the help of Eric Wolf's work; socialist economies of eastern Europe; examining capitalism and its mode of production	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	Write an essay on socialist mode of production and the reasons for its failure	Generic Elective 02 (GE 02)	Economy and Society
	Assignment (10 Marks)	Define and discuss the domestic mode of production	Generic Elective 02 (GE 02)	Economy and Society
APRIL	**Theory**	Globalization as an economic and cultural process; Mcdonaldization as a process; cross-cultural consumption; theories of economic development	Generic Elective 02 (GE 02)	Economy and Society
	Practical		NA	NA
	Tutorial	Cross-cultural consumption is a reality in the modern word. Elaborate.	Generic Elective 02 (GE 02)	Economy and Society
	Mid-Semester Examination (10 Marks)	Define peasant economy and discuss its specific mode of production	Generic Elective 02 (GE 02)	Economy and Society

MAY	**Theory**	Theories of development [contd.]	Generic Elective 02 (GE 02)	Economy and Society
	Practical	NA	NA	NA
	Tutorial	Revision of the entire syllabus depending on student feedback and demand.	Generic Elective 02 (GE 02)	Economy and Society

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Padma Priyadarshini

Department: Sociology

Semester: BA (Hons.) IV Sem

Month		Topic(s)	Course	Paper Code/Name
JAN	**Theory**	**Perspectives in Economic Sociology** 1.Formalism and Substantivism 2. New Economic Sociology	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	Discuss the ways in which the term 'economy' has evolved over the years. (Ref: Hann and Hart, Polanyi)	Core Course-08	Economic Sociology
FEB	**Theory**	**Forms of Exchange** 1.Reciprocity and Gift 2. Exchange and Money **Systems of Production** **1.**Hunting and Gathering 2. DMP	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	What is the difference between gifts and commodities? (Ref: Marcel Mauss and Carrier).	Core Course-08	Economic Sociology

	Mid Sem Exam	Topics: 1.Formalism and Substantivism 2. New Economic Sociology		Economic Sociology
MARCH	**Theory**	**Contemporary issues in Economic Sociology** 1.Development 2. Globalization	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	Systems of production with special reference to capitalism and Socialism	Core Course-08	Economic Sociology
	Assignment	Examine the differences between different systems of production, circulation and consumption	Core Course-08	Economic Sociology
APRIL	**Theory**	1.Globalization and cross-cultural consumption Ref: David Howes	Core Course-08	Economic Sociology
	Practical	NA	NA	NA
	Tutorial	Why is globalization being referred to as the latest stage of capitalism? (Ref: Wallerstein and Fran Tonkiss)	Core Course-08	Economic Sociology

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Padma Priyadarshini

Department: Sociology

Semester: BA (Hons.) II Sem

Month		Topics	Course	Paper Code/Name
JAN	**Theory**	**What is Family?** 1.Historicalaccount 2.Sociological account 3.Anthropological 4. How just is the family? 5. Gay-Lesbian families	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	What do we mean by the family? Has it lost its functions? How just is it? (Ref: Mitterauer, Worsley,Shapiro, Okin and Weston)	GE 02	Family and Intimacy
FEBRUARY	**Theory**	**Family and Intimacy** 6. Socialization in the Indian family 7. Gujarati family 8. Tamil Family 9. Eroticism in Rajasthani folk songs 10. The Elderly	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	Discuss the different aspects of Indian families (Ref: Lannoy, Trawick, Raheja and Gould and Vatuk)	GE 02	Family and Intimacy
	Mid-Sem Exam	Topics: 1,2 and 3	GE 02	Family and Intimacy

MARCH	**Theory**	**Critiques and Transformations** 11. The anti-social family 12. Feminist Heterosexuality 13. History of Marriage 14. Joint family system of India	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	Critically assess the family. (Ref: Barett, Carteledge and Ryan, Coontz and Shah)	GE 02	Family and Intimacy
	Assignment	When is a marriage not a marriage? Sex, sacrament and contract in Hindu marriage. (Ref: Patricia Uberoi)	GE 02	Family and Intimacy
APRIL	**Theory**	15. Hindu Marriage 16. How's the family?	GE 02	Family and Intimacy
	Practical	NA	NA	NA
	Tutorial	How is the family doing today? How has this course enhanced your understanding of the family? (Ref: Uberoi and Hochschild)	GE 02	Family and Intimacy

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. URMI BHATTACHARYYA
Department: SOCIOLOGY
***Semester*: IV**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Key Approaches in Kinship: Descent theory Alliance theory	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Kinship and the study of descent. Early anthropologists in African societies structuralism and kinship	Core Course 08	Sociology of Kinship
FEBRUARY	**Theory**	Key Approaches in Kinship: Cultural theory	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Cultural reconceptualization of kinship and its meaning	Core Course 08	Sociology of Kinship

MARCH	**Theory**	Concepts of family, household, domestic groups and its relation to kinship The anthropological definition of marriage	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Family and domestic cycle and the redefinition of kinship definition of kinship among the Nayars, and in Sinhalese law	Core Course 08	Sociology of Kinship
	Assignment 01	Write a note on the structural principles underlying African kinship systems.	Core Course 08	Sociology of Kinship
APRIL	**Theory**	Contemporary anthropological definitions of marriage Contemporary meaning of kinship – as relatedness Gender and kinship	Core Course 08	Sociology of Kinship
	Practical		NA	NA
	Tutorial **Assignment 02** (in lieu of the mid-sem test)	Hindu marriage law Relatedness among the Malays Interconnections of gender and kinship How are elements of biology and culture synthesized and reflected in kinship? Provide illustrations	Core Course 08 Core Course 08	Sociology of Kinship Sociology of Kinship

MAY	**Theory**	Redefining kinship: Cultural construction of kinship Reconstructing families Questioning biological paternity/maternity with IVF Surrogacy	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Chosen families New reproductive technologies and the construction of identity	Core Course 08	Sociology of Kinship

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: DR. URMI BHATTACHARYYA
Department: SOCIOLOGY
***Semester*: VI**

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing visual culture and the process of seeing	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	social construction of seeing Ways of seeing and knowledge-production throughout history	DSE 07	Visual Culture
FEBRUARY	**Theory**	The Spectacles of Modernity Critiquing the history of visual culture Narrative and visual forms of perception in contemporary life Panopticism and power	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Critiquing technical modernity How can visual culture escape the dominant narrative of the West Global events and local narratives Visuality and power	DSE 07	Visual Culture

MARCH	**Theory**	The Right to Look, power and visuality Representing Authority in colonial India State and Photographic Records	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Countervisuality How was authority symbolically represented in colonial India Photography, technology and truth	DSE 07	Visual Culture
	Assignment 01	What according to Debord is at the heart of unrealism in present-day society? Explain how it leads to a visible negation of life itself. Give your personal observations.	DSE 07	Visual Culture
APRIL	**Theory**	Critical Art Representation, theatre and resistance Visual Practices and identity formation	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Problems and possibilities of critical art Carnival and theatre as subversive contexts How does technology contribute to the restructuring of space and identity	DSE 07	Visual Culture
	Assignment 02 (in lieu of the mid-sem test)	With reference to Foucault's panopticism, write a note on the different forms of discipline in modern Europe	DSE 07	Visual Culture

MAY	**Theory**	Everyday life and visuality Printed image and identity Globalism, visuality and identity	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Practice of tactics and strategies in everyday and visuality How is the market as well as individual identity defined through technologically equipped forms of visuality Revision and clarification of doubts Declaration of internal evaluation results	DSE 07	Visual Culture

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: IV BA (Hons)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	The Gendered Society;Anthropology at the Front Lines of Gender-Based Violence	Generic Elective04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
FEBRUARY	**Theory**	Caste and Gender; Dalit Women Speak Out; Domestic Violence	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	What is gendered violence	Generic Elective 04	Gender and Violence

MARCH	**Theory**	Enforcing Cultural Codes; Variation in Sexual Violence During War; Sexual Harassment at Workplace; Rape andSexual Assaults on Women; Rewards of Rape; Recovering Subversions	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	Assignment	On Flavia Agnes, My Story, Our Story: Building Broken Lives	Generic Elective 04	Gender and Violence
APRIL	**Theory**	The other side of silence; Only words;Violence Against Women; This thing Called Justice	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Test	Enforcing Cultural Codes	Generic Elective 04	Gender and Violence

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: IV BA (P)

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Sex, Gender andSexuality	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
FEBRUARY	**Theory**	Gender Rights and Law	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Tutorial	What is the differerencebetween gender and sex	SEC	Gender Sensitization

MARCH	**Theory**	Gender, Family, Community and the State	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	Assignment	On Sex, Gender and Sexuality	SEC	Gender Sensitization
APRIL	**Theory**	Intersections of Caste,Class, Religion, Region and Disability	SEC	Gender Sensitization
	Practical	NA	NA	NA
	Test	Domestic Violence	SEC	Gender Sensitization

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Nupurnima Yadav

Department: Sociology **Semester: 6th B.A**

(Hons) (January-June, 2021)

Paper: Core course 14, Sociological Research Methods – II

Month		Topic(s)	Course	Paper Code/Name
January	**Theory**	The Process of Social Research Introduction to the theory of Concepts and Hypothesis	Core course 14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial	Students were divided into three groups, each group comprising of 20 students. They were asked to choose a topic of their choice and prepare a research report.		
February	**Theory**	Field (Issues and Context) Survey Methods: Sampling, Questionnaire and Interview	Core Course-14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial	The concept of field was explored and each student was advice to problematize their respective field of choice.		
March	**Theory**	Observation: Participant and non-participant. Graphical and Diagrammatic Presentation of Data (Bar diagrams, Pie-diagram, Histogram, Frequency Polygon, Smoothed frequency curve	Core Course-14	Sociological Research Methods – II

	Practical	NA	NA	NA
	Tutorial	Supervision of their Research questions and techniques of doing research. their interview schedules and questionnaires were closely monitored.		
	Mid- Semester exam (10 Marks)			
April	**Theory**	Measures of Central Tendency (Simple Arithmetic Mean, Median and Mode)	Core Course-14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial	Various tools from statistics were explored to ease their respective data projections.		
	Project (10 Marks)			Sociological Research Methods – II
May	**Theory**	Standard Deviation, Variance and Covariance	Core Course-14	Sociological Research Methods – II
	Practical	NA	NA	NA
	Tutorial		Core Course-14	Sociological Research Methods – II

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Nupurnima Yadav

Department: Sociology

Semester: VI B.A (Hons) (January-June 2021)

Paper: DSE 06 Indian Sociological Traditions

Month		Topics	Course	Paper Code/Name
January	**Theory**	G.S Ghurye: Caste and Race City and Civilization Social Ecology	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial	Discussion on the respective biographies of each scholar and engaging students for their review of Ghurye and	DSE 06	Indian Sociological Traditions
February	**Theory**	Society, Values. D P Mukerji: Tradition and Modernity Middle Class	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial	The boundaries of contemporary middle class were explored and students were asked to reflect on how social order impinges on their individual personality and value system	DSE 06	Indian Sociological Traditions

March	**Theory**	M.N. Srinivas: Social Change Verrier Elwin: Tribes in India	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial	Each student was asked to locate the idea of modernity in contemporary society and juxtapose that with the tribal societies.	DSE 06	Indian Sociological Traditions
	<u>Assignment (10 Marks)</u>	Values are intrinsic as well as instrumental. Elucidate the statement through the ideas of R.K Mukerjee.		
April	**Theory**	IrawatiKarve : Gender and Kinship Leela Dube: Caste and Gender	DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial **<u>Mid-Semester Examination (10 Marks)</u>**	Exploring Biographies of both the scholars and how each of them contributed towards the fortification of Gender studies in India.	DSE 06	Indian Sociological Traditions

May	**Theory**		DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial		DSE 06	Indian Sociological Traditions

SEMESTER WISE TEACHING PLAN (2020-21)

EVEN SEMESTER

SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jaiswal Department: Sociology

Semester : IV

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introducing Stratification Beteille (1977) Tawney (1964)	Core Course 10	Social Stratification
	Practicals			
	Tutorials	To understand the difference between stratification, Inequality and hierarchy.		
FEBRUARY	**Theory:**	Theories of social stratification McLellan (1995) Weber (1946) Bendix (1974) Functionalism	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Explain the Weberian model of stratification		

	Assignment :			
MARCH	**Theory:**	Identities and Inequalities Caste, Race and Ethnicity Bailey (1963) Jain (1996) Omi and Winant (1986) Rivers-Pitt (1967	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Discuss the intersectionality of race and class with relevant examples		
	Test	Presentation on various topics followed by Ppts, discussion and viva		
APRIL	**Theory:**	Feminism and Gendered Stratification Mitchell (1971) Acker (1973) Collins (1993)	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:	Analyse the category of 'gender' to understand stratification.		

MAY	**Theory:**	MOBILITY AND REPRODUCTION Bottero (2005) Bourdieu (1973	Core Course 10	Social Stratification
	Practicals:			
	Tutorials:			

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Even Semester 2020-2021

Name of Faculty: Dr. Veena Budhraja **Department: Statistics**

Semester: II, IV, VI

Month		Topics	Course	Paper Code/Name
JANUARY	**Theory**	Introduction to SPSS, Use of Count, Compute, Compute with if and Rank Feature, Concept of Recode and Visual Binning, Generation of Frequency Tables, Calculate Measure of Central Tendency, Measure of Dispersion, Create graph using Legacy Dialogs and chart Builder methods	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Experimental designs: Role, historical perspective, terminology, experimental error, basic principles, uniformity trials, fertility contour maps, choice of size and shape of plots and blocks, Basic Designs: Completely Randomized Design (CRD), Randomized Block Design (RBD), Latin Square Design (LSD)-layout, model, statistical analysis, advantages and their applications, Relative efficiencies of RBD compared to CRD, LSD compared to CRD, LSD compared to RBD taking rows as blocks, LSD compared to RBD taking columns as blocks. Practical work, Missing Plot technique (for both RBD and LSD) for one missing observation only, Variance of the difference between two estimated treatment effects out of which one has the missing observation (for both RBD and LSD)	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Practicals	Draw graphs and chart, Construct frequency table using recode and visual binning, compute descriptive statistics for row and group data, coefficient of variation, skewness and kurtosis, Use of Count, compute, compute with if and rank feature	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Analysis of a CRD with equal and unequal replicates, Analysis of RBD, Analysis of LSD, Analysis of RBD with one missing observation, Analysis of LSD with one missing observation.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
		Construction of X-bar and R chart , Construction	B.A. (Program	DSE1-(i):

		of X-bar and s chart	me)	Demography
	Tutorials			
February	**Theory**	Correlation Coefficient, Multiple and Partial coefficients, Fitting of Polynomial and Exponential curve, Fitting of most suitable curve, Fitting and plotting of Regression lines	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Balanced Incomplete Block Design (BIBD): parameters, relationships among its parameters, incidence matrix and its properties, Intra Block analysis, Variance of the difference between two estimated treatment effects, Relative efficiency of BIBD compared to RBD, Definition and Properties of Symmetric BIBD, Resolvable BIBD, Affine Resolvable BIBD, Construction of complimentary BIBD, Residual BIBD, Dual BIBD, Derived BIBD.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Practicals	Calculate Correlation coefficient, Rank correlation, Multiple and Partial correlation, Fitting of polynomials	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Intra block analysis of BIBD, Intra block analysis of a symmetric BIBD.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Tutorials			
March	**Theory**	Generation of random variable, calculations of CDF, plot the normal probability plot, Importing and exporting files, Missing Observation,	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Factorial Experiments: Advantages over simple experiments, notations, concepts of main effects and interaction effects. 2^n Factorial Designs - Standard order for treatment combinations, Main effects and interactions, Yates' Algorithm, Design and analysis, 3^nFactorial Designs - Standard order for treatment combinations, Main effects and interactions, Yates' Algorithm Design and analysis	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

		(n=2), Total and Partial confounding- Confounding 2n (n ≤ 5) in two blocks and four blocks, Confounding the 3n (n ≤ 3) in three blocks, identification of the confounded effects for both , 2^n (n ≤ 5) and 3^n (n ≤ 3) factorial designs.		
	Practicals	Generation of random sample, compute CDF,CLT for binomial and Poisson Distribution, Missing Observation, fit Binomial and Poisson and Negative Binomial distribution	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Analysis of 2^2 and 2^3 factorial in CRD, RBD and LSD, Analysis of a 3^2 factorial in CRD and RBD, Analysis of a completely confounded two level factorial design in 2 blocks, Analysis of a completely confounded two level factorial design in 4 blocks, Analysis of a partially confounded two level factorial design.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Tutorials			
	<u>Assignment</u>	Assignment will be based on topic specified in syllabus	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Based on problems of LSD & MSPT	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	<u>Test</u>	Test will be based on syllabus covered before midterm break	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
			B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

April	**Theory**			
		Statistical Inference, compute p-values, t-test, paired sample t-test, independent sample t-test chi square, comparison of several means, construction bivariate table, SRS, SS, code editing	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Analysis of a single replicate, Fractional Factorial Designs: Introduction, Concepts - Word, Defining Relation, Principal and Complementary Fractions, Aliases, Alias Structure, Resolution of a Design, Construction of Resolution III, IV and V Designs, Construction of one half and one-quarter fractions of 2^n (n ≤ 5).	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	Practicals	Obtain sampling distribution, construct bivariate distribution, t-test, chi square, edit syntax, SRS, Stratified and systematic sample	B.Sc. (H) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
		Analysis of a single replicate of a 2^n design, Analysis of one half fraction of 2^n factorial design, Analysis of one quarter fraction of 2^n factorial design.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Even Semester -2020-21

Name of the Faculty: Dr. M.K. Sukla **Department: Statistics**

Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	General Linear Model-Definition, representations and classification, Estimability, Gauss Markov Theorem, Estimation of error variance Concepts of linear parametric	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Practicals	Estimability when X is a full rank matrix, Estimability when X is not a full rank matrix, Distribution of Quadratic forms.	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Tutorials			
FEBRUARY	**Theory:**	Regression Analysis-Simple Linear Regression model, Least squares estimation of the parameters, Testing of Hypotheses, Interval estimation, Prediction, Coefficient of Determination, Regression through the origin, Multiple Linear Regression model, Estimation of model parameters, Testing of hypotheses-Global test, Test on Individual Regression Coefficients	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Practicals:	Simple Linear Regression, Multiple Regression, Tests for Linear Hypothesis, Bias in regression estimates, Lack of fit.	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Tutorials:			
	Assignment	Will be based on unsolved problems covered before midterm break	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
MARCH	**Theory:**	Prediction from a fitted model, Bias in regression estimates, Analysis of Variance and Covariance-Definition	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Practicals:	Test for subset of Regression coefficients, Extra Sum of Squares method, Partial F test, Sequential test, Orthogonal columns of X matrix, Confidence Intervals, Stepwise regression procedure, Selection of best linear regression equation by stepwise procedure.	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
		Will be based on Units covered before mid term break	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Tutorials:			
APRIL	**Theory:**	Model Adequacy checking- Residuals and outliers, violation of assumption of Normality, Lack of fit and pure error, Polynomial models: Orthogonal Polynomials.	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Practicals:	Residual Analysis, Orthogonal Polynomials.	B.Sc. (H) Statistics	STAT C-402 **Linear Models**
	Tutorials:			

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

January to May 2021

April to June 2021

Name of the Faculty: Akash Varshney

Department: Statistics

Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	**Theory**	Introduction to investment and markets: Cash flows- deterministic and random, basic theory of interest, bonds and yields, term structure of interest rates, portfolio theory. Introduction to derivatives	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
April		Statement of the fundamental theorem of algebra and its consequences. Relation between roots and coefficients or any polynomial equations. Solutions of cubic and biquadratic equations when some conditions on roots of equations are given.	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Practicals	Practical : To compute NPV and to obtain IRR of the investments To verify "no arbitrage" principle. Interest Rates , Bond , Portfolio Return .	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		Practical Based on Algebra of Matrices. For a real Skew Symmetric matrix S ,show that matrix A defined by (I-S) (I+S)-1 is an orthogonal matrix. Inverse of a Matrix.	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials			
FEBRUARY	**Theory:**	Tools Needed For Option Pricing: Forward contracts, spot price, forward price, future price. Call and put options, zero-coupon bonds and discount bonds, Pricing derivatives: Arbitrage relations and perfect financial markets, pricing futures, put-call parity for European and American options, relationship between strike price and	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics

May		Review of algebra of matrices, Elementary Transformation, Row reduction and echelon forms, the solution of matrix equations AX=B, linear independence, Applications of linear equations, inverse of a matrix.	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Practicals:	Practical : To price future / forward contracts , Call-put parity for options . Option Price using Martingale. Practical based on different Option trading Strategies.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		Reducing a Quadratic Form to its canonical form and finding its rank and index. show that matrix A defined as A= (In - X (X'X)-1X') is idempotent. Also, determine its rank and characteristic root. . Symmetric Determinants	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials:			

	Assignment	1. Assignment based on 10 different option trading strategies 2. Assignment based on discrete and continuous Stochastic Process.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		Theory of Equations :Problems and Results based Relation between roots and Coeffecients and Symmetric functions of roots of a Polynomial Equation	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
MARCH	**Theory:**	Discrete Stochastic Processes, Binomial processes, General random walks, Geometric random walks, Binomial models Continuous time processes – Brownian motion, geometric Brownian motion, Wiener process; Introduction to stochastic calculus. Stochastic differential equations and	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		Rank of a matrix, row-rank, column-rank, standard theorems on ranks, rank of the sum and the product of two matrices. Characteristic roots and Characteristic vector, Properties of characteristic roots, Cayley Hamilton theorem	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
June	**Practicals:**	To construct binomial trees and to evaluate options using these trees , Simulation of continuous time stochastic processes	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		Finding the product of two matrices by considering partitioned matrices. Finding Generalized Inverse of a matrix and symmetric generalized inverse of a matrix. Characterstic Roots and Characterstic Vectors	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials:			
	Test	Test based on Discrete and Continuous Process , Itos Lemma , Stochastic Differential Equation.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		Test Based on Theory of Equations , Characterstic Roots and Characterstic Vectors ,System of linear Equations.	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra

APRIL	**Theory:**	Intrinsic of option markets: Black-Scholes differential equation, Black-Scholes formula for European and American options, Implied volatility. Hedging portfolios: Delta, Gamma and Theta hedging.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
			B. Sc.(H) Statistics	STAT C-202: Algebra
	Practicals:	To price options using Black – Scholes formula. Application of Greeks to hedge investment portfolios.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
			B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials:			

MAY	**Theory:**	Binomial Model for European options: Cox-Ross-Rubinstein approach to option pricing. Discrete dividends,	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
	Practicals:	Pricing of options using discrete time models, Revision of Practicals.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics
		.	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials:			

SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Even Semester -2020-21

Name of the Faculty: Dr. Dipika **Department: Statistics**
Semester: II.IV, VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Analysis of Variance and Covariance-Definition of fixed, random and mixed effect models	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Survival Analysis: To study various survival functions and interrelationship between them. Introduction to various survival models, Censoring Schemes: Definition of censoring. Study of Type I, Type II and progressive or random censoring with biological examples.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Practicals	Analysis of Variance of a one way classified data	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Estimation of survival function, Determination of death density function and hazard function, Identification of type of censoring and to estimate survival time for type I censored data.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
		Analysis of a CRD with equal and unequal replicates, Analysis of RBD, Analysis of LSD, Analysis of RBD with one missing observation, Analysis of LSD with one missing observation.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
		To compute NPV and to obtain IRR of the investments To verify "no arbitrage" principle. Interest Rates , Bond , Portfolio Return .	B.Sc.(H) Statistics	STAT-DSE-4(A): Financial Statistics
	Tutorials			
February	Theory	Analysis of Variance under Fixed effects model for one way classified data	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Non parametric Methods: Actuarial and Kaplan-Meier methods for estimating survival function and variance of the Estimator, Competing Risk Theory: Introduction of various measures of competing risk theory, Estimation of probabilities of death using maximum likelihood principle and	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis

		modified minimum Chi-square methods.		
	Practicals	Analysis of Variance of a one way classified data	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Identification of type of censoring and to estimate survival time for type I censored data, Identification of type of censoring and to estimate survival time for type II censored data, Identification of type of censoring and to estimate survival time for progressively type I censored data, Estimation of mean survival time and variance of the estimator for type II censored data.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
		Intra block analysis of BIBD, Intra block analysis of a symmetric BIBD.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
		To price future / forward contracts, Call-put parity for options. Option Price using Martingale. Practical based on different Option trading Strategies.	B.Sc.(H) Statistics	STAT-DSE-4(A): Financial Statistics
	Tutorials			
March	**Theory**	Analysis of Variance under Fixed effects model for two way classified data, with equal number of observations per cell	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Theory of independent and dependent risks: Bivariate normal dependent risk model., Stochastic Epidemic Models: Definition of epidemic, susceptibles and infective. Simple and general epidemic model. Duration of an epidemic.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Practicals	Analysis of Variance of a two way classified data .	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Estimation of mean survival time and variance of the estimator for progressively type I censored data, To estimate the survival function and variance of the estimator using Non-parametric methods with Actuarial methods, To estimate the survival function and variance of the estimator using Non-parametric method with Kaplan-Meier	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis

		method.		
		Analysis of 2^2 and 2^3 factorial in CRD, RBD and LSD, Analysis of a 3^2 factorial in CRD and RBD, Analysis of a completely confounded two level factorial design in 2 blocks, Analysis of a completely confounded two level factorial design in 4 blocks, Analysis of a partially confounded two level factorial design.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
		To construct binomial trees and to evaluate options using these trees , Simulation of continuous time stochastic processes	B.Sc.(H) Statistics	STAT-DSE-4(A): Financial Statistics
	Tutorials			
	Assignment	Unsolved problems from theory.	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Unsolved problems from theory.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Test	Test will be based on Course Covered before midterm break	B.Sc.(H) Statistics	STAT-C-402: Linear Models
			B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
April	**Theory**			
		Analysis of Covariance under fixed effects model for one way.	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		Statistical Genetics: Introduction, concepts- Genotype, Phenotype, Dominance, Recessiveness, Linkage and Recombination, Coupling and Repulsion. Mendelian laws of Heredity, Random mating, Gametic array, relation between genotypic array and gametic array under random mating. Segregation matrix. Estimating probabilities of gametes for future generations, Clinical trials: Phases of clinical drug trial. Blinding.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis

	Practicals	Analysis of Covariance of a one way classified data.	B.Sc.(H) Statistics	STAT-C-402: Linear Models
		To estimate Crude probability of death, Net-type I probability of death, Net-type II probability of death, partially crude probability of death, To estimate gene frequencies F.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
		Analysis of a single replicate of a 2^n design, Analysis of one half fraction of 2^n factorial design, Analysis of one quarter fraction of 2^n factorial design.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
		To price options using Black – Scholes formula. Application of Greeks to hedge investment portfolios, Binomial Model for European options: Cox-Ross-Rubinstein approach to option pricing. Discrete dividends.	B.Sc.(H) Statistics	STAT-DSE-4(A): Financial Statistics

SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN
2020-21

Name of the Faculty: Dr. Alok Kumar Singh
Department: Statistics
Semester: II & IV

Month		Topics	Course	Paper Code/Name
January	**Theory:**	Introduction to quality dimensions of quality, Its concept, application and importance. Process and product control, Seven tools of SPC, Chance and Assignable causes of quality variation. Statistical Control Charts- Statistical basis of 3-σ Control charts, Control charts for variables: $\bar{X}$ & R-chart, $\bar{X}$ & s-chart.	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
		Control charts for variables: X- bar and R-charts, Control charts for attributes: p and c-charts	**GE-IV**	STAT-GE-IV Applied Statistics
	Practicals:	Construction and interpretation of statistical control charts for X bar, R, s	B.Sc. (Hons) Statistics	
		Control charts for variables: X- bar and R-charts	**GE-IV**	
	Tutorials:	--		
	Theory:	Rational Sub-grouping, Revised and Modified Control Limits. Control charts for attributes: np-chart, p-chart, c-chart and u-chart.	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control

February		Comparison between control charts for variables and control charts for attributes. Analysis of patterns on control chart, estimation of process capability. Acceptance sampling plan: Principle of acceptance sampling plans. Single and Double sampling plan,		
		Introduction to Demographic Methods, measurement of population, rates and ratios of vital events. Measurement of mortality: Crude Death Rate, Specific Death	**GE-IV**	STAT-GE-IV Applied Statistics
	Practicals:	Construction and interpretation of statistical control charts for n, np , c.	B.Sc. (Hons) Statistics	
		Construction and interpretation p-chart (fixed sample size) and c-chart.	**GE-IV**	
	Tutorials:	--		
March	**Theory:**	OC, AQL, LTPD, AOQ, AOQL, ASN, ATI functions with graphical interpretation, use and interpretation of Dodge and Romig's sampling inspection plan tables. Introduction to Six-Sigma: Overview of Six Sigma, Lean Manufacturing and Total Quality Management (TQM). Organizational Structure and Six Sigma training plans. Index Numbers: Definition, construction of index numbers and problems thereof for weighted and unweighted index numbers including Laspeyre's, Paasche's, Edgeworth-Marshall and Fisher's. Average of Price Relatives,	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Practicals:	Construction of u chart, OC curve	B.Sc. (Hons) Statistics	
		Computation of measures of mortality.	**GE-IV**	
		Computation of measures of fertility		

	Tutorials:	and population growth.		
	Assignment	Based on Unit 1 to 3.		
April	**Theory**	Chain index numbers, conversion of fixed based to chain based index numbers and vice-versa. Criteria of Good Index Numbers. Consumer price index numbers. Base shifting, splicing and deflating of index numbers	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
	Practicals:	Construction of Various type of Index Numbers.		
	Tutorials:			

GE-II

Month		Topics	Course	Paper Code/Name
JUNE	**Theory:**	Random Variables: Discrete and continuous random variables, pmf, pdf, cdf. Illustrations of random variables and its properties., Expectation, variance, moments and moment generating function. Discrete probability distributions: Binomial, Poisson, Geometric, NegativeBinomial and Hypergeometric	GE-II	STAT-GE-IV Introductory Probability
	Practicals:	Fitting of Poisson distributions, Problems on Geometric distribution.	GE-II	
	Tutorials:	--		

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Jan.,-April 2021

Name of the Faculty: Dr. Ramesh Kumar

Department: Statistics

Semester: Semester IV and VI

Month		Topics	Course	Paper Code/Name
Jan.	**Theory:**	Bivariate Normal Distribution (BVN): pdf of BVN, properties of BVN, marginal and Conditional pdf of BVN. Multivariate Data: Random Vector: Probability mass/density functions, Distribution Function, Mean vector, Dispersion matrix, Marginal distributions, Conditional distributions	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Economic Time Series: Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of	Sem-IV	STAT-GE-4: Applied Statistics
	Practicals:	Bivariate Normal Distribution and it's properties	Bachelor of Statistics (Hons.)	STAT-C-602: Multivariate Analysis and Non-
		Measurement of trend: Fitting of linear, quadratic trend, exponential		STAT-GE-4: Applied Statistics
Feb.	**Theory:**	Multivariate Normal distribution and its properties. Sampling distribution for mean vector and variance-covariance matrix. Multiple and partial correlation coefficient and their properties. Introduction to discriminant Analysis, Principal Components Analysis and Factor	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods

		Analysis.		
		method of semi-averages and method of least squares (linear, quadratic and exponential).Measurement of seasonal variations by method of ratio to trend.	Sem-IV	STAT-GE-4: Applied Statistics
	Practicals:	Multivariate Normal Distribution and it's properties, Partial Correlation Coefficient, Multiple Correlation Coefficient, Plane of Regression, Principal Component Analysis, Discriminant analysis, Factor Analysis	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Measurement of seasonal indices by Ratio-to-trend method and plotting of trend values and comparing with given data graphically	Sem-IV	STAT-GE-4: Applied Statistics
	Assignment	Assignment based bivariate normal distribution and multivariate normal distribution, PCA and factor analysis	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
March	**Theory**	Sequential Analysis: Sequential probability ratio test (SPRT) for simple v/s simple Hypotheses. Fundamental relations among α, β, A and B, determination of A and B in Practice. Wald's fundamental identity and the derivation of operating characteristics (OC) and average sample number (ASN) functions, examples based on normal, Poisson, binomial and exponential distributions	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods

		Demographic Methods: Introduction, measurement of population, rates and ratios of vital events. Measurement of mortality: CDR, SDR (w.r.t. Age and sex), IMR, Standardized death rates. Life	Sem-IV	STAT-GE-4: Applied Statistics
	Practicals:	SPRT Procedure and Graphical representation of decision lines, acceptance and rejection regions, ASN function and ASN curve, OC function and OC curve	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
	Practicals:	Computation of measures of mortality, Completion of life table,	Sem-IV	STAT-GE-4: Applied Statistics
	Mid Term Test	Unit I and Unit II		
April	**Theory:**	Nonparametric Tests: Introduction and Concept, Test for randomness based on total number of runs, Empirical distribution function, Kolmogorov Smirnov test for one sample, Sign tests- one sample and two samples, Wilcoxon-Mann-Whitney test, Kruskal-Wallis test.	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
		Measurement of fertility and reproduction: CBR, GFR, and TFR. Measurement of population growth:	Sem-IV	STAT-GE-4: Applied Statistics
	Practicals:	Test for randomness based on total number of runs, Kolmogorov Smirnov test for one sample, Sign test: one sample, two sample, large samples, Wilcoxon-Mann-Whitney U – test, Kruskal - Wallis test, Wald-Wolfowitz test. Median Test.	Bachelor of Statistics (Hons.) Semester VI	STAT-C-602: Multivariate Analysis and Non-Parametric Methods
	Practicals:	Computation of measures of fertility and population growth	Sem-IV	STAT-GE-4: Applied Statistics

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Even SEMESTER 2020-2021

Name of the Faculty: Dr. Tanuja Sriwastava

Department: Statistics

Semester: II, IV, VI

Month		Topic	Course	Paper Code/ Name
January	**Theory**	Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of time series. Measurement of trend by method of free-hand curve, method of semi-averages and method of least squares (linear, quadratic and modified exponential).	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
	Practical	1. Measurement of trend: Fitting of linear, quadratic trend, exponential curve and plotting of trend values and comparing with given data graphically. 2. Measurement of seasonal indices by Ratio-to-trend method and plotting of trend values and comparing with given data graphically.	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
		1. MultipleCorrelation. 2. PartialCorrelation. 3. Bivariate Normal Distribution.	B.Sc. (H) Statistics, Semester VI	STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Tutorials			
February	**Theory**	Measurement of seasonal variations by method of ratio to trend.Definition, Criteria for a good index number, different types of index numbers. Construction of index numbers of prices and quantities, consumer price index number. Uses and limitations of index numbers.	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
	Practical	3. Construction of price and quantity index numbers by Laspeyre's formula, Paasche's formula, Marshall-Edgeworth's formula, Fisher's Formula. Comparison and interpretation. 4. Construction of wholesale price index number, fixed base index number and consumer price index number with interpretation	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
		4. Multivariate Normal Distribution. 5. SPRT procedure. OC function and OC curve. 6. ASN function and ASN curve	B.Sc. (H) Statistics, Semester VI	STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Tutorials			
March	**Theory**	Importance of statistical methods in industrial research and practice. Determination of tolerance limits. Causes of variations in quality: chance and assignable. General theory of control charts, process & product control, Control charts for variables: X-bar and R-charts.	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
	Practical	5. Construction and interpretation of X bar & R-chart 6. Construction and interpretation p-chart (fixed sample size) and c-chart	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics

		7. Test for randomness based on total number of runs,	B.Sc. (H) Statistics, Semester VI	STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Tutorials			
April	**Theory**	Control charts for attributes: p and c-charts. Demographic Methods: Introduction, measurement of population, rates and ratios of vital events. Measurement of mortality: CDR, SDR (w.r.t. Age and sex), IMR, Standardized death rates. Life (mortality) tables: definition of its main functions and uses.	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
		Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability – classical, statistical, and axiomatic. Conditional Probability, laws of addition and multiplication, independent events, theorem of total probability, Bayes' theorem and its applications.	B.Sc. (H) Statistics, Semester II (Batch I)	STAT-GE-2, Introductory Probability
	Practical	7. Computation of measures of mortality 8. Completion of life table	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
		8. Kolmogrov Smirnov test for one sample. 9. Sign test: one sample, two samples, large samples. 10. Wilcoxon-Mann-Whitney U-test	B.Sc. (H) Statistics, Semester VI	STAT-C-602 Multivariate Analysis and Nonparametric Methods
		1. Fitting of binomial distributions for n and p = q = ½ given 2. Fitting of binomial distributions for n and p given 3. Fitting of binomial distributions computing mean and variance	B.Sc. (H) Statistics, Semester II (Batch I)	STAT-GE-2, Introductory Probability
	Tutorials			
May	**Theory**	Measurement of fertility and reproduction: CBR, GFR, and TFR. Measurement of population growth: GRR, NRR.	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
		Discrete and continuous random variables, p.m.f., p.d.f. ,c.d.f. Illustrations of random variables and its properties. Expectation, variance, moments and moment generating function.	B.Sc. (H) Statistics, Semester II (Batch I)	STAT-GE-2, Introductory Probability
	Practical	9. Computation of measures of fertility and population growth	B.Sc. (H) Statistics, Semester IV (Batch II)	STAT-GE-4, Applied Statistics
		11. Kruskal-Wallis test	B.Sc. (H) Statistics, Semester VI	STAT-C-602 Multivariate Analysis and Nonparametric Methods
		4. Fitting of Poisson distributions for given value of lambda 5. Fitting of Poisson distributions after computing mean	B.Sc. (H) Statistics, Semester II (Batch I)	STAT-GE-2, Introductory Probability
	Tutorials			

June	**Theory**	Convergence in probability, almost sure convergence, Chebyshev's inequality, Binomial, Poisson, geometric, negative binomial, hypergeometric, uniform, normal.	B.Sc. (H) Statistics, Semester II (Batch I)	STAT-GE-2, Introductory Probability
	Practical	6. Application problems based on binomial distribution 7. Application problems based on Poisson distribution 8. Problems based on area property of normal distribution	B.Sc. (H) Statistics, Semester II (Batch I)	STAT-GE-2, Introductory Probability
	Tutorials			

SEMESTER WISE TEACHING PLAN

SRI VENKATESWARA COLLEGE

Teacher Name: Parul Saini **Department: Statistics**

Semester: Even Semester (Semester II, IV,VI)

Month		**Topics**	**Course**	**Paper Code/ Name**
Jan	**Theory**	Introduction to SPSS, Use of Count, Compute, Compute with if and Rank Feature, Concept of Recode and Visual Binning, Generation of Frequency Tables, Calculate Measure of Central Tendency, Measure of Dispersion, Create graph using Legacy Dialogs and chart Builder methods,	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Practical	Draw graphs and chart, Construct frequency table using recode and visual binning, compute descriptive statistics for row and group data, coefficient of variation, skewness and kurtosis, Use of Count, compute, compute with if and rank feature	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Theory	Experimental designs: Role, historical perspective, terminology, experimental error	B.Sc. (Hons.) Statistics	STAT-C-601: Design of Experiment

Feb	**Theory**	Correlation Coefficient, Multiple and Partial coefficients, Fitting of Polynomial and Exponential curve, Fitting of most suitable curve, Fitting and plotting of Regression lines	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Practical	Calculate Correlation coefficient, Rank correlation, Multiple and Partial correlation, Fitting of polynomials	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Assignment	Assignment was given on different topic of the syllabus	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Theory	Basic principles, uniformity trials, fertility contour map, choice of size and shape of plots and blocks	B.Sc. (Hons.) Statistics	STAT-C-601: Design of Experiment
March	**Theory**	Generation of random variable, calculations of CDF, plot the normal probability plot, Importing and exporting files, Missing Observation,	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Practical	Generation of random sample, compute CDF,CLT for binomial and Poisson Distribution, Missing Observation, fit Binomial and Poisson and Negative Binomial distribution	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Assignment	Assignment was given on different topic of the syllabus	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Theory	CRD, RBD,LSD	B.Sc. (Hons.) Statistics	STAT-C-601: Design of Experiment

April	**Theory**	Statistical Inference, compute p-values, t-test, paired sample t-test, independent sample t-test chi square, comparison of several means, construction bivariate table, SRS, SS, code editing	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Practical	Obtain sampling distribution, construct bivariate distribution, t-test, chi square, edit syntax, SRS, Stratified and systematic sample	B.Sc. (Hons.) Statistics	SEC-1: Data Analysis Using Software Packages (SPSS)
	Theory	Relative efficiency, analysis with missing observation	B.Sc. (Hons.) Statistics	STAT-C-601: Design of Experiment

(Semester II) (till June)

Month		**Topics**	**Course**	**Paper Code/Name**
Apr.	**Theory**	Bivariate data, Scatter Diagram, Karl Pearson's Coefficient of Correlation, Spearman rank correlation with and without ties.	B.Sc. (Hons.) Statistics	STAT-C-201Probability and Probability Distributions
	Practical	Karl Pearson correlation coefficient. Correlation coefficient for a bivariate frequency distribution. Spearman rank correlation with and without ties.	B.Sc. (Hons.) Statistics	STAT-C-201Probability and Probability Distributions
	Practical	---	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
May.	**Theory**	Principle of least square, fitting of polynomial and exponential curve,	B.Sc. (Hons.)	STAT-C-201Probability and

		Regression	Statistics	Probability Distributions
	Practical	Fitting of polynomials, exponential curves. Planes of regression and variances	B.Sc. (Hons.) Statistics	STAT-C-201Probability and Probability Distributions
	Assignment	Assignment was given on different topics related with curriculum to each student.	B.Sc. (Hons.) Statistics	STAT-C-201Probability and Probability Distributions
	Practical	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
Jun.	**Theory**	Partial and multiple correlation, Continuous probability distribution: Normal, Uniform	B.Sc. (Hons.) Statistics	STAT-C-201Probability and Probability Distributions
	Practical	Partial and multiple correlations. Fitting of binomial distributions. Application problems based on binomial distribution. Fitting of Poisson distributions. Application problems based on Poisson distribution.	B.Sc. (Hons.) Statistics	STAT-C-201Probability and Probability Distributions
	Practical	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability

SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN (2020-2021)

Name of the Faculty: Theory: Ms. Kanika Verma **Department:** Statistics

Course: B.Sc. (Hons) Statistics
Semester: Even Semester (Semester-II, IV)

Month		Topics	Course	Paper Code/Name
January	Theory	Estimation: Concepts of estimation, unbiasedness, sufficiency, consistency and efficiency.	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Practicals	Practicals based on sufficiency and efficiency.	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Tutorials	--	--	--
February	Theory	Fisher- Neyman Criterion, Factorization theorem. Complete statistic, Minimum variance unbiased estimator (MVUE), Rao-Blackwell and Lehmann-Scheffe theorems and their applications. Cramer-Rao inequality, MVB estimators and their applications. Methods of Estimation: Method of moments, method of maximum likelihood estimation, method of minimum Chi-square, basic idea of Bayes estimators.	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Practicals	Practical based on MVUE, Cramer Rao Inequality and MVBE and MLE, Baye's Estimators,	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Tutorials	--	--	--

arch	Theory	Principles of test of significance: Null and alternative hypotheses (simple and composite), Type-I and Type-II errors, critical region, level of significance, size. Best critical region, most powerful test, uniformly most powerful test, uniformly most powerful unbiased critical region (UMPU).	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Practicals	Practicals based on Type-I and Type-II errors, critical region, level of significance, size. Best critical region, MPCR, UMPU.	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Tutorials	--	--	--
April	Theory	Neyman Pearson Lemma and its applications to construct most powerful test. Likelihood ratio test, properties of likelihood ratio tests. Best critical region, most powerful test, uniformly most powerful test, uniformly most powerful unbiased critical region (UMPU).	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Practicals	Practical based on Neyman Pearson Lemma, BCR, MPCR, UMPCR	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Assignment	Assignment Test based on Unit I, II and III	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Tutorials	--	--	--
	Theory	Algebra of matrices - A review, theorems related to triangular, symmetric and skew symmetric matrices, idempotent matrices, Hermitian and skew Hermitian matrices	B.Sc. (Hons) Statistics	STAT C-202: Algebra
	Practicals	Practicals based on Algebra of matrices. Properties verification of idempotent matrices, Hermitian and skew Hermitian matrices.	B.Sc. (Hons) Statistics	STAT C-202: Algebra
	Tutorials	--	--	--
May	Theory	Interval estimation: Confidence interval for the parameters of various distributions, Confidence interval for Binomial proportion, Confidence interval for population correlation coefficient for Bivariate Normal distribution, Pivotal quantity method of constructing confidence interval, Large sample confidence intervals.	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference

	Practicals	Practical based on Interval estimation.	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Practical Assignment	Practical Assignment Test	B.Sc. (Hons) Statistics	STAT-C-401: Statistical Inference
	Tutorials	--	--	--
	Theory	Continuation with Algebra of matrices: orthogonal matrices, singular and non-singular matrices and their properties. Trace of a matrix, unitary, involutory and nilpotent matrices. Adjoint and inverse of a matrix and related properties.	B.Sc. (Hons) Statistics	STAT C-202: Algebra
	Practicals	Practicals based on properties of orthogonal matrices, unitary, involutory and nilpotent matrices. Inverse of the matrix and related properties.	B.Sc. (Hons) Statistics	STAT C-202: Algebra
	Tutorials	--	--	--
June	Theory	Determinants of Matrices: Definition, properties and applications of determinants for 3rd and higher orders, evaluation of determinants of order 3 and more using transformations. Symmetric and Skew symmetric determinants, Circulant determinants, Jacobi's Theorem, product of determinants.	B.Sc. (Hons) Statistics	STAT C-202: Algebra
	Practicals	Practicals based on Determinants of Matrices and related properties.	B.Sc. (Hons) Statistics	STAT C-202: Algebra
	Tutorials	--	--	--

SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN (2020-2021)

Teacher Name: Dr Chetan **Department: Statistics**

Semester: Even Semester (Semester II & IV)

Semester II (till June)

Month		Topics	Course	Paper Code/Name
Apr.	**Theory**	Variance and covariance of random variables and their properties, conditional expectations. Moments, moment generating function and its properties.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Practical	Karl Pearson correlation coefficient. Correlation coefficient for a bivariate frequency distribution. Spearman rank correlation with and without ties.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Theory	Probability: Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability: classical, statistical, and axiomatic. Conditional Probability.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Tutorials	--	--	--
May.	**Theory**	Cumulants, Cumulant Generating Function and its properties.	B.Sc. (Hons.)	STAT-C-201 Probability

		Characteristic function and its properties. Inversion theorem for continuous random variables along with applications. Bivariate transformations with illustrations.	Statistics	and Probability Distributions
	Practical	Fitting of polynomials, exponential curves. Partial and multiple correlations. Planes of regression and variances of residuals for given simple correlations.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Assignment	--	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Theory	Laws of addition and multiplication, independent events, theorem of total probability, Bayes' Theorem and its applications. Discrete and continuous random variables, pmf, pdf, cdf.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Tutorials	--	--	--
	Assignment	Assignment was given on different topics related with curriculum to each student.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
Jun.	**Theory**	Discrete Probability Distributions: Uniform, Binomial, Poisson, Negative Binomial Distribution	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions

	Practical	Fitting of binomial distributions. Application problems based on binomial distribution. Fitting of Poisson distributions. Fitting of negative binomial distribution. Application problems based on Poisson distribution.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Test	--	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Theory	Illustrations of random variables and its properties. Expectation, variance, moments and moment generating function. Binomial & Poisson Distribution	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Tutorials	--	--	--
	Test	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability

Semester IV

Month		Topics	Course	Paper Code/Name
Jan.	**Theory**	--	--	--
	Practical	Measurement of trend: Fitting of linear, quadratic trend, exponential curve and plotting of trend values and comparing with given data	B.Sc. (Hons.) Statistics	STAT-GE-4: Applied Statistics
	Tutorials	--	--	--
Feb.	**Theory**	--	--	--
	Practical	Measurement of seasonal indices by Ratio-to-trend method. Plotting of trend values and comparing with given data graphically.	B.Sc. (Hons.) Statistics	STAT-GE-4: Applied Statistics
	Tutorials	--	--	--
	Assignment	--	--	--
Mar.	**Theory**	--	--	--
	Practical	Computation of measures of mortality. Completion of Life Table.	B.Sc. (Hons.) Statistics	STAT-GE-4: Applied Statistics
	Tutorials	--	--	--
	Test	--	--	--
Apr.	**Theory**	--	--	--
	Practical	Computation of measures of fertility and population growth.	B.Sc. (Hons.) Statistics	STAT-GE-4: Applied Statistics
	Tutorials	--	--	--
	Test	--	--	--