



SRI VENKATESWARA COLLEGE

2019-20

EVEN SEMESTER

TEACHING PLANS

Department of Mathematics
Sri Venkateswara College
Even Semester Teaching Plan (Jan-April 2019)

MS. SHAKUNTLA WADHWA

Month		Topics	Course	Paper Code/Name
Jan	Theory	Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruence, complete set of residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem	B.Sc(H) Maths Sem-VI	Number Theory
	Tutorials:	To Discuss the doubt of students and to solve various exercise of Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruences, complete set of residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem.	B.Sc(H) Maths Sem-VI	Number Theory
	Practicals	1. Plotting of second and third order respective solution family of differential equation. 2. Growth and decay model (exponential case only). 3. (a) Lake pollution model (with constant/seasonal flow and pollution concentration). (b) Case of single cold pill and a	B.Sc(H) Maths Sem-II B	Differential Equations

	Practicals	1. Declaring a complex number and graphical representation. e.g. $Z_1 = 3 + 4i$, $Z_2 = 4 - 7i$ 2. Program to discuss the algebra of complex numbers. e.g., if $Z_1 = 3 + 4i$, $Z_2 = 4 - 7i$, then find $Z_1 + Z_2$, $Z_1 - Z_2$, $Z_1 * Z_2$, and Z_1 / Z_2 3. To find conjugate, modulus and phase angle of an array of complex numbers. e.g., $Z = [2 + 3i, 4 - 2i, 6 + 11i, 2 - 5i]$	B.Sc(H) Maths Sem-VI	Complex Analysis
Feb	Theory	Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of the Dirichlet product, the Möbius inversion formula, the greatest integer function, Euler's phi-function, Euler's theorem, reduced set of residues, some properties of Euler's phi-function.	B.Sc(H) Maths Sem-VI	Number Theory
	Tutorials:	To discuss the doubt of students and to solve various exercise of number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of the Dirichlet product, the Möbius inversion formula, the greatest integer function, Euler's phi-function, Euler's theorem, reduced set of residues, some properties of Euler's phi-function.	B.Sc(H) Maths Sem-VI	Number Theory

Practicals	4. (a) Predatory-prey model (basic volterra model, with density dependence, effect of DDT, two prey one predator). (b) Epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers). (c) Battle model (basic battle model, jungle warfare, long range weapons). 5. Plotting of recursive sequences, and study the convergence. 6. Find a value that will make the following inequality holds for all m	B.Sc(H) Maths Sem-II B	Differential Equations
Practicals	5. To perform contour integration. 6. To plot the complex functions and analyze the graph 7. 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	B.Sc(H) Maths Sem-VI	Complex Analysis
Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-II B/IV/VI	ODE/Number Theory/Complex Analysis

March	Theory	Order of an integer modulo n , primitive roots for primes, composite numbers having primitive roots, Euler's criterion, the Legendre symbol and its properties, quadratic reciprocity.	B.Sc(H) Maths Sem-VI	Number Theory
	Tutorials:	To discuss the doubt of students and to solve various exercise of order of an integer modulo n , primitive roots for primes, composite numbers having primitive roots, Euler's criterion, the Legendre symbol and its properties, quadratic reciprocity.	B.Sc(H) Maths Sem-VI	Number Theory
	Practicals	7. Verify the Bolzano-Weierstrass theorem through plotting of sequences and hence identify convergent subsequences from the plot. 8. Study the convergence /divergence of infinite series of real numbers by plotting their sequences of partial sum. 9. Cauchy's root test by plotting nth roots. 10. D'Alembert's ratio test by	B.Sc(H) Maths Sem-II B	Differential Equations

	Practicals	8. To determine how many terms should 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 %. 9. To perform Laurent's series expansion of a given function $f(z)$ around a given point z. 10. To compute the poles and corresponding residues of complex	B.Sc(H) Maths Sem-VI	Complex Analysis
	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-IIB/VI	ODE/Number Theory/Complex Analysis
April	Theory	Quadratic congruence with composite moduli. Public key encryption, RSA encryption and decryption, the equation $x^2 + y^2 = z^2$, Fermat's Last Theorem and to revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-VI	Number Theory
	Tutorials:	To discuss the doubt of students and to solve various exercise of quadratic congruence with composite moduli. Public key encryption, RSA encryption and decryption, the equation $x^2 + y^2 = z^2$, Fermat's Last Theorem.	B.Sc(H) Maths Sem-VI	Number Theory

Practicals	For the given various sequences given k find m such that given condition satisfied. For the given series, to calculate $\left \frac{a_{n+1}}{a_n} \right$ and $\left a_n \right ^{\frac{1}{n}}$, To revise whole syllabus.	B.Sc(H) Maths Sem-II B	Differential Equations
Practicals	10.To perform Conformal Mapping and Bilinear Transformations and to revise whole syllabus.	B.Sc(H) Maths Sem-VI	Complex Analysis
Test	To take test related to syllabus And internal lab related to above practical.	B.Sc(H) Maths Sem-IIB/VI	ODE/Number Theory/Complex Analysis

Month		Topics	Course	Paper Code/Name
January	Theory	Introduction to LPP, Graphical Method and Preliminaries to Simplex Method	B.Sc.(Hons) Maths III Sec A	DSE 4 (ii) Linear Programming and Theory of Games
	Practicals	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 A	Complex Analysis, C13
	Tutorials	Formulation of LPPs, Question Based on Graphical Method	B.Sc.(Hons) Maths III Sec A and Sec B	DSE 4 (ii) Linear Programming and Theory of Games
February	Theory	Basic Feasible Solution Simplex Method. Theory of Games (Introduction , Saddle point Theory)	B.Sc.(Hons) Maths III Sec A	DSE 4 (ii) Linear Programming and Theory of Games
	Practicals	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 A	Complex Analysis, C13
	Tutorials	Questions based on Simplex method and Theory of Games	B.Sc.(Hons) Maths III Sec A and Sec B	DSE 4 (ii) Linear Programming and Theory of Games
March	Theory	Theory of Games, Transportation Problem and Assignment Problem	B.Sc.(Hons) Maths III Sec A	DSE 4 (ii) Linear Programming and Theory of Games

	Practicals	7. To obtain the Taylor series expansion of given function $f(z)$ around given point z_0 . 8. 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%. 9. To compute the poles and corresponding residues of complex functions.	B.Sc. (H) Mathematics III A	Complex Analysis, C13
	Tutorials	Examples of TP, AP and Theory of Games	B.Sc.(Hons) Maths III Sec A and Sec B	DSE 4 (ii) Linear Programming and Theory of Games
	<u>Assignment</u>	TP and AP of Last Years' Question Papers	B.Sc.(Hons) Maths III Sec A	DSE 4 (ii) Linear Programming and Theory of Games
	Theory	Simplex Method, Big-M method, Two Phase Method and Proof of Theorems. Duality, Theorems and Results, Basic Duality Theorem Equivalence between Game and LPPs	B.Sc.(Hons) Maths III Sec A	DSE 4 (ii) Linear Programming and Theory of Games
	Practicals	10. To obtain Laurent series expansion of given function around given point. 11. To perform conformal mapping and bilinear transformations.	B.Sc. (H) Mathematics III A	Complex Analysis, C13
	Tutorials	Questions on Simplex Method, Duality and Theory of Games	B.Sc.(Hons) Maths III Sec A and Sec B	DSE 4 (ii) Linear Programming and Theory of Games
	<u>Test</u>	TP, AP and Theory of Games	B.Sc.(Hons) Maths III Sec A	DSE 4 (ii) Linear Programming and Theory of Games
April				

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, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability,	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of 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, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, intermediate value theorem for integrals.	B.Sc(H) Sem-IV A	Riemann Integration & Series of Functions
	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 A	C8 Partial Differential Equations

Feb	Theory	Fundamental theorems (I and II) of 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.	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	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 A	C8 Partial Differential Equations
	Test	To take class test related to syllabus And lab test related to above Practicals.	B.Sc(H) Maths Sem-IVA	

March	Theory	Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit 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. Cauchy	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit 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. Cauchy	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	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	B.Sc(H) Maths Sem-IV A	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		

April	Theory	Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials:	To Discuss the Doubt of students and to solve various exercise of Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Practicals	Discuss the uniform convergence of sequence of functions with various examples and to revise whole Practical.	B.Sc(H) Maths Sem-IV A	C8 Partial Differential Equations

		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	C8:Partial Differential Equations.
	Practical s	1. Plotting of recursive sequences. 2. Study the convergence of sequences through plotting.	B.Sc. (H) Maths Sem-II	C4 : Differential equations
	Practical s	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	B. Sc. (H) Maths Sem IV	C8: Partial Differential Equations
	Tutorials	To discuss the doubts of student and various exercise, questions and examples related to definition and examples of rings, properties of rings, subrings, integral domains and fields, Characteristic of ring, Ideals, Ideals generated by a subset of ring, Factor rings, Operations of ideals, Prime and maximal ideals	B. Sc. (H) Maths Sem IV	Ring Theory and Linear Algebra-I
Feb	Theory	Mathematical modeling of vibrating string, vibration membrane, conduction of heat in solids, gravitational potential, conservation of law and Burger's equations, classification of second order PDE, reduction to canonical forms, equations with constant coefficients, <u>general solution.</u>	B.Sc(H) Maths Sem-IV	Partial Differential Equations
	Practicals	3. Verify Bolzano Weierstrass theorem through plotting of sequences and hence identify convergent subsequences from the plot. 4. Study the convergence/divergence of infinite series by plotting their sequences of partial sum.	B.Sc. (H) Maths Sem-II	C 4: Differential equations

	Practicals	3) Plot the integral surfaces of a given first order PDE with initial data. 4) Solution of wave equation	B.Sc.(H) Maths Sem IV	C8: Partial Differential Equations
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Ring homomorphisms ¹¹ , Properties of ring homomorphisms, First, Second and Third Isomorphism theorems for	B.Sc(H) Maths Sem-IV	Ring Theory and Linear Algebra-I
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.	B.Sc(H) Maths Sem-IV	Analysis V
	Practicals	5. Cauchy's root test by plotting nth roots. 6. Ratio test by plotting the ratio of nth and n+1th term.	B.Sc. (H) Maths Sem-II	C 4 Differential Equations
	Practicals	5) Solution of one-Dimensional heat equation 6) Solving systems of ordinary differential equations.	B.Sc. (H) Maths Sem-IV	C8: Partial Differential Equations
	Tutorials	To discuss the doubt of students and various exercise questions and examples related Quotient spaces, Linear combination of vectors, Linear span, Linear independence, Basis and dimension, Dimension of subspaces. Unit 4: Linear Transformations Linear transformations, Null space, Range,	B.Sc. (H) Maths Sem-IV	Ring Theory and Linear Algebra-I
	Assignments	To give assignment related to syllabus	B.Sc(H) Maths Sem- IV	C8:PARTIAL DIFFERENTIAL EQUATIONS
	Test	To take internal test related to syllabus.	B.Sc(H) Maths Sem-IV	C8:PARTIAL DIFFERENTIAL EQUATIONS

April	Theory	Method of separation of variables for second order PDE, 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	B.Sc(H) Maths Sem-IV	Partial Differential Equations
	Practicals	7. Convergence of Sequence by epsilon -K definition 8. Revision and Internal Test	B.Sc(H) Maths Sem-II	C 4 Differential Equations
	Practicals	To revise all the practicals and to conduct internal test.	B.Sc(H) Maths Sem-IV	C8 Partial Differential equations
	Tutorials	To discuss the doubt of students and various exercise questions and examples related Matrix representation of a linear transformation, Algebra of linear transformations, Isomorphism, Isomorphism theorems, Invertibility	B.Sc(H) Maths Sem-IV	Ring Theory and Linear Algebra-I

Month		Topics	Course	Paper Code/Name
JANUARY	Theory:	To introduce the concepts of Differential Equations and Mathematical models, order and degree of a differential equation, exact differential equations and integrating factors of first order differential equations, reducible second order differential equations, application of first order differential equations to acceleration- velocity model, growth and decay model	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
	Practicals:	Floating point representation and computer arithmetic, significant digits, errors, order of a Method convergence	B.A.(Prog.) Sem VI	DSE-2(i)Numerical Methods
		Basic concepts of Mathematica and Practical (1-2) of the list given in the syllabus:	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
		To discuss the doubt of students and various exercise questions and examples related to Floating point representation and computer arithmetic, significant digits, errors, order of a method method	B.A.(Prog.)SemVI	DSE-2(i)Numerical Methods
		To discuss the doubt of students and various exercise questions and examples related to Algebraic and Order Properties	B.Sc.(Hons.)Maths Sem II	C3 - Real Analysis
FEBRUARY	Theory:	Introduction to compartmental models, lake pollution model, case study of Lake Burley Griffin, drug assimilation into the blood (case of a single cold pill, case of a course of cold pills, case study of alcohol in the bloodstream, exponential growth of population, limited growth of population, limited growth of population (with and without harvesting)	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
		To discuss the doubt of students and various exercise questions and examples related to Bisection method, secant	B.A.(Prog.) Sem VI	DSE-2(i)Numerical Methods
	Practicals:	Practicals (3 (a),(b),(c)) Lake pollution model(with constant/seasonal flow and pollution concentration), case of single cold pill and a course of cold pills, limited growth of population(with and without harvesting)	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations

	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Bisection method, secant method, Regula Falsi method, Newton-Raphson method	B.A.(Prog.)SemVI	DSE-2(i)Numerical Methods
		To discuss the doubt of students and various exercise questions and examples related to The Completeness Property of $\mathbb{R}$, Archimedean property, Density of rational numbers in $\mathbb{R}$, Definition and types of intervals, Nested intervals property, Neighbourhood of a point in $\mathbb{R}$, Open and closed sets in $\mathbb{R}$	B.Sc.(Hons.)Maths Sem II	C3 - Real Analysis
	Assignment	Assignment to be given related to the syllabus	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
MARCH	Theory:	General solution of homogenous equation of second order, principle of superposition for a homogenous equation, Wronskian, its properties and applications, Linear homogenous and non- homogenous equations of higher order with constant coefficients, Euler's equation, method of undetermined coefficients, method of variation of parameters, applications of second order differential equations to mechanical vibrations.	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
		Gauss elimination method, Gauss-Jordan method, Jacobi method, Gauss-Seidel method, Interpolation: Lagrange form, Newton method, Finite Differences	B.A.(Prog.) Sem VI	DSE-2(i)Numerical Methods
	Practicals:	Practicals (4 (a),(b),(c)) Predator- prey model(basic Volterra model, with density dependence, effect of DDT, two prey one predator), epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers), battle model(basic battle model, jungle warfare, long range weapons)	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Gauss elimination method, Gauss-Jordan method, Jacobi method, Gauss-Seidel method, Interpolation: Lagrange form, Newton method, Finite Difference operators, Gregory-Newton forward and backward difference interpolations, Piecewise polynomial interpolation	B.A.(Prog.)SemVI	DSE-2(i)Numerical Methods

		To discuss the doubt of students and various exercise questions and examples related to Convergent Sequence, Bounded sequence, Limit of a sequence, limit Theorems, Monotone Convergence Theorem, subsequences, Bolzano-Weierstrass theorem, Limit superior and limit inferior, Cauchy sequence, Cauchy's convergence criterion	B.Sc.(Hons.)Maths Sem II	C3 - Real Analysis
	<u>Mid Term Test</u>	To take internal Test based on the syllabus covered.	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
		To take internal Lab Test based on the syllabus covered.	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
APRIL	Theory	Equilibrium points, interpretation of the phase plane, predator- prey model and its analysis, epidemic model of influenza and its analysis, battle model and its analysis and to revise whole syllabus. To discuss previous year questions papers some of which are available on my Blog https://mathsmodellig.wordpress.com/	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
		Numerical differentiation, Numerical integration, Extrapolation methods, Richardson extrapolation, Romberg integration, Ordinary differential equation:	B.A.(Prog.) Sem VI	DSE-2(i) Numerical Methods
	Practicals:	Revision	B.Sc.(Hons.)Maths Sem II	C4 Differential Equations
	Tutorials:	To discuss the doubt of students and various exercise questions and examples related to Numerical differentiation, Numerical integration, Extrapolation methods, Richardson extrapolation, Romberg integration, Ordinary differential equation: Euler's method, Modified Euler's method	B.A.(Prog.)SemVI	DSE-2(i) Numerical Methods
		To discuss the doubt of students and various exercise questions and examples related to Infinite series, convergence and divergence of infinite series, Cauchy Criterion, Tests for convergence, Absolute and conditional convergence	B.Sc.(Hons.)Maths Sem II	C3 - Real Analysis

Deepti Jain

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Algebraic and order properties of $\mathbb{R}$, d -neighborhood of a point in $\mathbb{R}$, Idea of countable sets, uncountable sets and uncountability of $\mathbb{R}$, Bounded above sets, Bounded below sets, Bounded sets, Unbounded sets, Supremum and infimum of a set.	B.Sc.(H) Mathematics II Semester	BMATH203 Real 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	Algebraic and order properties of $\mathbb{R}$, d -neighborhood of a point in $\mathbb{R}$, Idea of countable sets, uncountable sets and uncountability of $\mathbb{R}$, 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		
	Practical	(1). Plotting of recursive sequences (2). Study the convergence of sequences through plotting.	B.Sc.(H) Mathematics II Semester	BMATH204 Differential Equations
FEBRUARY	Theory	The completeness property of $\mathbb{R}$, The Archimedean Property, Density of Rational (and irrational) numbers in $\mathbb{R}$, Limit Points of a set, Isolated points, Illustrations of Bolzano-Weierstrass theorem for sets, Sequences, Bounded	B.Sc.(H) Mathematics II Semester	BMATH203 Real Analysis

		sequences, Convergent sequences.		
	Tutorial	Exercises based on the Archimedean Property, Limit points and Convergence of sequences.		
	Practical	N/A		
	Theory	Sequences and their limits, Convergent sequences, Limit theorems, Monotone sequences and their convergence	B.A.(Prog) IV Semester	Analysis
	Tutorial	Exercises and doubts based on convergence and divergence of sequences using various results and/or tests.		
	Practical	N/A		
	Practical	(3).Verify Bolzano Weierstrass theorem through plotting of sequences and hence identify convergent subsequences from the plot. (4).Study the convergence/divergence of infinite series by plotting their sequences of partial sum. Assignments related to the above topics.	B.Sc.(H) Mathematics II Semester	BMATH204 Differential Equations
MARCH	Theory	Limit of a sequence, Limit Theorems, Monotone Sequences, Monotone Convergence Theorem, Subsequences, Divergence criteria, Monotone Subsequence Theorem, Bolzano Weierstrass Theorem for sequences, Cauchy sequence, Cauchy's convergence criterion.	B.Sc.(H) Mathematics II Semester	BMATH203 Real Analysis
	Tutorial	Exercises and doubts based on convergence and divergence of sequences using various results and/or		

		tests.		
	Practical	N/A		
	Assignment	Questions from the topics including Supremum and Infimum of sets, and sequences of real numbers.		
	Theory	Subsequences, Cauchy sequence and convergence criterion; Infinite series and their convergence, Cauchy criterion for series.	B.A.(Prog) IV Semester	Analysis
	Tutorial	Exercises based on convergence of series and alternating series.		
	Practical	N/A		
	Assignment	Questions from the topics: Interpolating polynomials		
	Practical	(5). Cauchy's root test by plotting n th roots. (6). Ratio test by plotting the ratio of n th and $n+1$ th term. (7). Plot the given series and identify the convergent series. Assignments related to above topics	B.Sc.(H) Mathematics II Semester	BMATH204 Differential Equations
	Tutorial	Exercises based on convergence of series and alternating series.		
	Practical	N/A		
April	Theory	Infinite series, Convergence and divergence of infinite series, Cauchy criterion, Tests for convergence: Comparison Test, Limit Comparison Test, Ratio Test, Cauchy's n th root test, Integral Test, Alternating Series, Leibniz Test, Absolute and Conditional convergence.	B.Sc. (Hons) II Sem	Analysis-I
	Tutorial	Exercises based on convergence of series and alternating series.		
	Practical	N/A		

	Theory	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 limit and continuity.		
	Practical	N/A		
	Practical	(8). Solving Inequality (9). Checking the convergence of a sequence using Cauchy criterion of convergence.	B.Sc.(H) Mathematics II Semester	BMATH204 Differential Equation

Ninian Nauneet Kujur

Month		Topics	Course	Paper Code/Name
January	Theory	Algebraic and Order Properties of R , δ -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, Suprema and Infima, The Completeness Property of R , The Archimedean Property, Density of Rational (and Irrational) numbers in R , Intervals.	B.Sc(H) MathsSem-II(A)	Real Analysis
	Theory	De Moivre.s theorem (both integral and rational index). Solutions of equations using trigonometry	BA(P) Sem II	Algebra

	Practicals	Downloading and installing statistical software R, Using R as calculator, reading and getting data into R: combine and scan commands, types and structure of data items with their properties	B.Sc(H) Math-Sem-IV(A)	CAS and related softwares (SEC-II)
	Practicals	Use of Mathematica as calculator in computing functions	B.Sc(H) Maths-SemIV(A)	CAS and related softwares (SEC-II)
	Tutorials	Questions related to the portion covered .	B.Sc(H) Maths-SemII (A)	Real Analysis
February	Theory	Limit points of a set, Isolated points, Illustrations of Bolzano-Weierstrass theorem for sets. Sequences, Bounded sequence, Convergent sequence, Limit of a sequence. Limit Theorems,	B.Sc(H) Maths-SemII (A)	Real Analysis
	Theory	Expansion for $\cos nx$, $\sin nx$ in terms of powers of $\sin x$, $\cos x$, and $\cos^n x$, $\sin^n x$ in terms of Cosine and Sine of multiples of x , Summation of series	BA(P) Sem II	Algebra

Practicals	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	B.Sc(H) Maths-SemIV(A)	CAS and related softwares (SEC-II)
Practicals	making graphs;	B.Sc(H) Maths-SemIV(A)	CAS and related softwares (SEC-II)
Tutorials	Questions related to the portion covered	B.Sc(H) Maths-SemII (A)	Real Analysis

March	Theory	Monotone Sequences, Monotone Convergence Theorem. Subsequences, Divergence Criteria, Monotone Subsequence Theorem (statement only), Bolzano Weierstrass Theorem for Sequences. Cauchy sequence, Cauchy's Convergence Criterion. Infinite series, convergence and divergence of infinite series,.	B.Sc(H) Maths-SemII (A)	Real Analysis
	Theory	Relation between roots and coefficients of n^{th} degree equation. Solutions of cubic and biquadratic equations, when some conditions on roots of the equation are given,	BA(P) Sem II	Algebra
	Practicals:	Exercises based on R: Plotting in R: line charts, pie charts, box-whisker plots, Cleveland dot charts, bar charts, explore data and relations, saving graphs	B.Sc(H) Maths-SemIV(A)	CAS and related softwares (SEC-II)

	Practicals	MATLAB/Octave for exploring linear algebra	B.Sc(H) Maths-SemIV(A)	CAS and related softwares (SEC-II)
	Tutorials	Questions related to the portion covered	B.Sc(H) Maths-SemII (A)	Real Analysis
April	Theory:	Cauchy Criterion, Tests for convergence: Comparison test, Limit Comparison test, Ratio Test, Cauchy's nth root test, Integral test, Alternating series, Leibniz test, Absolute and Conditional convergence	B.Sc(H) Maths-SemII (A)	Real Analysis
	Theory	Symmetric functions of the roots for cubic and biquadratic equations.	BA(P) Sem II	Algebra

Practicals	Summary statistics for vectors, data frames, matrices and lists; summary tables and revision.	B.Sc(H) Maths- SemIV(A)	CAS and related softwares (SEC-II)
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	Practicals	plot curve and surfaces	B.Sc(H) Maths- SemIV(A)	CAS and related softwares (SEC-II)
	Tutorials	Questions related to the portion covered	B.Sc(H) Maths-SemII (A)	Real Analysis

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 integrability, Definition of Riemann integration by Riemann sum and equivalence of the two definitions, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability,	B.Sc(H) Maths Sem-IV	Riemann Integration & Series of Functions
	Tutorials	To Discuss the Doubt of students and to solve various exercise of 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, Riemann integrability of monotone functions and continuous functions, Properties of Riemann integrable functions, Definitions of piecewise continuous and piecewise monotone functions and their Riemann integrability, intermediate value theorem for	B.Sc(H) Maths Sem-IV	Riemann Integration & Series of Functions
	Theory	Differential equations and mathematical models, Order and degree of a differential equation, Exact differential equations and integrating factors of first order differential equations, Reducible second order differential equations, Applications of first order differential equations to	B.Sc(H) Maths Sem-II	Differential Equaton

Practicals	1. Solution of first order differential equation. 2. Plotting of second order solution family of differential equation. 3. Plotting of third order solution family of differential equation. 4. Solution of differential equation by variation of parameter method. 5. Solution of system of ordinary	B.Sc(H) Maths Sem-II	Differential Equations
Test	To take class test related to syllabus and lab test related to above Practicals.	B.Sc(H) Maths Sem-II and IV	Riemann Integration & Series of Functions And Differential Equations

Feb	Theory	Fundamental theorems (I and II) of 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.	B.Sc(H) Maths Sem-IV	Riemann Integration & Series of Functions
	Tutorials	To Discuss the Doubt of students and to solve various exercise questions of related above topics	B.Sc(H) Maths Sem-IV	Riemann Integration & Series of Functions
	Theory	General solution of homogeneous equation of second order, Principle of superposition for a homogeneous equation; Wronskian, its properties and applications, Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation, Method of undetermined coefficients, Method of variation of parameters,	B.Sc(H) Maths Sem-II	Differential Equation
	Assignments	To be given assignment related to syllabus.	B.Sc(H) Maths Sem-II and Sem-IV	Riemann Integration & Series of Functions /Differential Equation
	Practicals	Solution of Cauchy problem for first order partial differential equations. Solutions and plotting graphs of the Lake pollution model (with case study of Lake Burley Griffin), Drug assimilation into the blood (case of a single cold pill, case of a course of cold pills, case study of alcohol in the bloodstream) via Mathematica software.		Differential Equation

March	Theory	Pointwise and uniform convergence of sequence of functions, Theorem on the continuity of the limit function of a sequence of functions, Theorems on the interchange of the limit and derivative, and the interchange of the limit 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, Cauchy criterion and the Weierstrass M-Test for uniform	B.Sc(H) Maths Sem-IV	Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related work done in Theory Class.	B.Sc(H) Maths Sem-IV	Riemann Integration & Series of Functions
	Theory	Introduction to compartmental models, Lake pollution model (with case study of Lake Burley Griffin), Drug assimilation into the blood (case of a single cold pill, case of a course of cold pills, case study of alcohol in the bloodstream), Exponential growth of population,	B.Sc(H) Maths Sem-II	Differential Equation
	Practicals	Graphs and solutions of the Exponential growth of population, Limited growth of population, Limited growth with harvesting. Interacting population models, Epidemic model of influenza and its	B.Sc(H) Maths Sem-II	Differential Equations
	Test	To take internal test related to syllabus And internal lab test related to above Practical.	B.Sc(H) Maths Sem-II/IV	Riemann Integration & Series of Functions / Differential Equation

April	Theory	Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem), Uniform convergence, Differentiation and integration of power series, Abel's Theorem to Revise whole syllabus, to Discuss last previous year questions papers	B.Sc(H) Maths Sem-IV A	Riemann Integration & Series of Functions
	Tutorials	To discuss the doubt of students and various exercise questions and examples related to Properties of Cauchy-Hadamard theorem and Uniform convergence, Differentiation and integration of power series, Abel's Theorem	B.Sc(H) Maths Sem-IV B	Riemann Integration & Series of Functions
	Theory	Interacting population models, Epidemic model of influenza and its analysis, Predator-prey model and its analysis, Equilibrium points, Interpretation of the phase plane, Battle model and its analysis and revise whole syllabus, to discuss last previous year questions papers.	B.Sc(H) Maths Sem-II	Differential Equation
	Practicals	Solutions and graphs of the Interpretation of the phase plane, Battle model and its analysis via Mathematica software. Revision of Practical	B.Sc(H) Maths Sem-II	Differential Equations

Dr. Nisha Bohra

<u>Month</u>		<u>Topics</u>	<u>Course</u>	<u>Paper Name and code</u>
January	Theory 1	Vector spaces, subspaces, Algebra of subspaces	B.Sc. (H) Mathematics II A	Ring Theory and Linear Algebra-I, C10
	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 A	Complex Analysis, C13
	Practicals	12. Declaring a complex number and its graphical representation 13. Algebra of complex numbers. 14. To find conjugate, modulus and phase angle of an array of complex numbers.	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 and IIA	C14 and C10
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, C10
	Theory 2	Derivatives of function, Definite Integrals of functions, Contours, Contour Integrals and its examples, Upper bound for moduli of contour Integrals, Antiderivatives, Proof of Antiderivative Theorem, Cauchy-Goursat Theorem.	B.Sc. (H) Mathematics III B	Complex Analysis, C13
	Practicals	15. To compute integral over straight line path between the two specified end points. 16. To perform contour integration 17. 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 and IIA	C14 and C10
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, C10
	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 A	Complex Analysis, C13
	Practicals	18. To obtain the Taylor series expansion of given function $f(z)$ around given point z_0 . 19. 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%. 20. 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 and IIA	C14 and C10
	Assignment	Assignment given before mid-semester break on the basis of topics covered in the class.	B.Sc. (H) Mathematics II A and III A	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 A	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, C10
	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 A	Complex Analysis, C13
	Practicals	21. To obtain Laurent series expansion of given function around given point. 22. To perform conformal mapping and bilinear transformations.	B.Sc. (H) Mathematics III A	Complex Analysis, C13

Mr. Sudhakar Yadav

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
	Theory	Limits, Limits involving the point at infinity, continuity. Properties of complex numbers, regions in the complex plane, functions of complex variable, mappings. Derivatives, differentiation formulas, Cauchy-Riemann equations, sufficient conditions for differentiability.	B.Sc(H) Maths Sem-VI B	Complex Analysis (Analysis V)
	Tutorials:	To Discuss the doubt of students and to solve various exercise of inner product spaces and norms.	B.Sc(H) Maths Sem-VI	Ring Theory and Linear Algebra – II
	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
	Theory	Analytic functions, examples of analytic functions, exponential function, Logarithmic function, trigonometric function, derivatives of functions, definite integrals of functions, Contours, Contour integrals and its examples, upper bounds for moduli of contour integrals.	B.Sc(H) Maths Sem-VI B	Complex Analysis
	Tutorials:	To Discuss the doubt of students and to solve various exercise of Gram-Schmidt orthogonalization process, orthogonal complements.	B.Sc(H) Maths VI	Ring Theory and Linear Algebra – II
	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/VI	Partial Differential Equations/Complex Analysis
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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
	Theory	Antiderivatives, proof of antiderivative theorem, Cauchy-Goursat theorem, Cauchy integral formula. An extension of Cauchy integral formula, consequences of Cauchy integral formula, Liouville's theorem and the fundamental theorem of algebra, Convergence of sequences and series, Taylor series and its examples. Laurent series and its examples, absolute convergence of power series.	B.Sc(H) Maths Sem-VI B	Complex Analysis
	Tutorials:	To Discuss the doubt of students and to solve various exercise related to Bessel's inequality, the adjoint of a linear operator, Least Squares Approximation, minimal solutions to systems of linear equations.	B.Sc(H) Maths VI	Ring Theory and Linear Algebra – II
	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 B/IIA	Partial Differential Equations/Complex Analysis
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
	Theory	Uniform convergence of power series, uniqueness of series representations of power series, Isolated singular points, residues, Cauchy's residue theorem, residue at infinity. Types of isolated singular points, residues at poles and its examples, definite integrals involving sines and cosines and revise the syllabus.	B.Sc(H) Maths Sem VI	Complex Analysis
	Tutorials:	To discuss the doubt of students and to solve various exercise related to Normal and self-adjoint operators, Orthogonal projections and Spectral theorem. Further, to discuss last previous year questions papers	B.Sc(H) Maths VI	Ring Theory and Linear Algebra – II
	Practicals	Discuss the uniform convergence of sequence of functions with various examples and to revise whole syllabus.	B.Sc(H) Maths Sem-IV B	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/VI	Partial Differential Equations/Complex Analysis
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Ms. Rajni Arora

		Topics	Course	Paper name
J A N U A R Y	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, discrete distributions: uniform, binomial, Poisson, geometric, negative binomial, continuous distributions: uniform, normal, exponential, Joint cumulative distribution function and its properties, joint probability density functions,	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Theory 2	Introduction to R, Using R as calculator, reading and getting data into R: combine and scan commands, types and structure of data items with their properties	B.Sc(H) Mathematics Sem-IV	CAS and related softwares (SEC-II)
	Theory 3	Gauss elimination method (with row pivoting), Gauss–Jordan method, Gauss Thomas method for tridiagonal systems Iterative methods: Jacobi and Gauss Seidel iterative methods	B.Sc(H) courses	Numerical Methods (GE-4)
	Practicals	Downloading and installing statistical software R, Using R as calculator, reading and getting data into R: combine and scan commands, types and structure of data items with their properties	Sem-IV	CAS and related softwares (SEC-II)
	Tutorials	Doubts and discussion on guidelines' problems	Sem-VI	DSE-3

		Topics	Course	Paper name
F E B R U A R Y	Theory 1	Marginal and 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	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Theory 2	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	B.Sc(H) Mathematics Sem-IV	CAS and related softwares (SEC-II)
	Theory 3	Interpolation: Lagrange's form and Newton's form Finite difference operators, Gregory Newton forward and backward differences Interpolation, Piecewise polynomial interpolation: Linear interpolation	B.Sc(H) courses	Numerical Methods (GE-4)
	Practicals	Exercises based on R: manipulating vectors, data frames, matrices and lists, viewing objects within objects, constructing data objects and	Sem-IV	CAS and related

		conversions, summary commands, stem and leaf plot, histogram, scatter plot, pairs plot, bar charts		softwares (SEC-II)
	Tutorials	Doubts and discussion on guidelines' problems	Sem-VI	DSE-3
	Assignment 1	Assignment to be submitted by the end of October consisting of questions of topics covered in September and October	B.Sc(H) Mathematics Sem-VI	DSE-3
	Assignment 2	Assignment to be submitted by the end of October consisting of questions of topics covered in September and October	B.Sc(H) Mathematics Sem-IV	SEC-II
	Assignment 3	Assignment to be submitted by the end of October consisting of questions of topics covered in September and October	B.Sc(H) courses	GE-4

M A R C H		Topics	Course	Paper name
	Theory 1	Chebyshev's inequality, statement and interpretation of (weak) law of largenumbers and strong law of large numbers, Central Limit theorem for independentand identically distributed random variables with finite variance, Markov Chains	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)
	Theory 2	Plotting in R: line charts, pie charts, box-whisker plots, Cleveland dot charts, bar charts, explore data and relations, saving graphs	B.Sc(H) Mathematics Sem-IV	CAS and related softwares (SEC-II)
	Theory 3	Cubic splineinterpolation (only method),Numerical differentiation: First derivatives andsecond order derivatives, Richardson extrapolation, Numerical integration:Trapezoid rule, Simpson's rule (only method), Newton–Cotes open formulas	B.Sc(H) courses	Numerical Methods (GE-4)
	Practicals	Exercises based on R: 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)
	Tutorials	Doubts and discussion on topics covered	Sem-VI	DSE-3
	Test 1	Test of topics covered till date	B.Sc(H) Mathematics Sem-VI	DSE-3
	Test 2	Test of topics covered till date	B.Sc(H) Mathematics Sem-IV	SEC-II
	Test 3	Test of topics covered till date	B.Sc(H) courses	GE-4

A		Topics	Course	Paper name
	Theory 1	Chapman-Kolmogorov equations, classification of states and related problems	B.Sc(H) Mathematics Sem-VI	Probability Theory and Statistics (DSE-3)

P R I L	Theory 2	Summary statistics for vectors, data frames, matrices and lists; summary tables and revision	B.Sc(H) Mathematics Sem-IV	CAS and related softwares (SEC-II)
	Theory 3	Extrapolation methods: Romberg integration, Gaussian quadrature	B.Sc(H) courses	Numerical Methods (GE-4)
	Practicals	Summary statistics for vectors, data frames, matrices and lists; summary tables and revision.	Sem-IV	CAS and related softwares (SEC-II)
	Tutorials	Doubts and discussion on previous year question papers	Sem-VI	DSE-3

Dr. Shahna

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Dual spaces, dual basis, double dual, transpose of a linear transformation and its matrix in the dual basis, annihilators, Eigenspaces of a linear operator, diagonalizability	B.Sc(H) Maths Sem-VI A	C14- Ring Theory II
	Theory	Use of Mathematica as calculator in computing functions	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Practicals	1. Solution of Cauchy problem for first order PDE. 2. Plotting the characteristics for the first order PDE.	B.Sc(H) Maths Sem-IV B	C8- Partial Differential Equations
	Practicals	Use of Mathematica as calculator in computing functions	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Theory	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, Efficient computations Bisection method, Secant method.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-4 Numerical Methods

	Theory	Fundamental operation with vectors in Euclidean space n , Linear combination of vectors, Dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality, Projection vectors, Some elementary results on vectors in n ; Matrices: Gauss–Jordan row reduction, Reduced row echelon form, Row equivalence, Rank, Linear combination of vectors, Row space, Eigenvalues, Eigenvectors, Eigenspace, Characteristic polynomials, Diagonalization of matrices; Definition and examples of vector space, Some elementary properties of vector spaces, Subspace, Span of a set, a spanning set for an eigenspace, Linear independence and linear dependence of vectors, Basis and dimension of a vector space	Sem II BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-2 Linear Algebra
	Assignment	To give assignments to some students of the above courses		
FEBRUARY	Theory	invariant subspaces and Cayley-Hamilton theorem, the minimal polynomial for a linear operator, Inner product spaces and norms	B.Sc(H) Maths Sem-VI A	C14- Ring Theory II
	Theory	in making graphs; MATLAB/Octave for exploring linear algebra and to plot curve and surfaces	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Practicals	3. Plot the integral surfaces of a given first order PDE with initial data. 4. Solution of wave equation associated with initial conditions.	B.Sc(H) Maths Sem-IV B	C8-Partial Differential Equations
	Practicals	in making graphs; MATLAB/Octave for exploring linear algebra and to plot curve and surfaces	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Theory	Regula Falsi method, Newton Raphson method, Newton's method for solving nonlinear systems, Jordan method, Gauss–Gauss elimination method (with row pivoting) and	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons)	GE-4 Numerical Methods

	Theory	Maximal linearly independent sets, Minimal spanning sets; Application of rank: Homogenous and non-homogenous systems of linear equations; Coordinates of a vector in ordered basis, Transition matrix, Linear transformations: Definition and examples, Elementary properties, The matrix of a linear transformation	Sem II BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-2 Linear Algebra
	Assignment	To give assignments to some students of the above courses		
MARCH	Theory	Gram-Schmidt orthogonalization process, orthogonal complements, Bessel's inequality	B.Sc(H) Maths Sem-VI A	C14- Ring Theory II
	Theory	the statistical software R: R as a calculator, explore data and relations	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Practicals:	5. Solution of one-Dimensional heat equation , for a homogeneous rod of length l. 6. Solving systems of ordinary differential equations.	B.Sc(H) Maths Sem-IV B	C8-Partial Differential Equations
	Practicals	the statistical software R: R as a calculator, explore data and relations	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Theory	Gregory Newton forward and backward differences Interpolation, Piecewise polynomial interpolation: Linear interpolation, Cubic spline interpolation (only method), Numerical differentiation: First derivatives and second order derivatives, Richardson extrapolation Numerical integration: Cotes open formulas–Trapezoid rule, Simpson's rule (only method), Newton Extrapolation methods: Romberg integration.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-4 Numerical Methods

	Theory	Linear operator and similarity; Application: Computer graphics, Fundamental movements in a plane, Homogenous coordinates, Composition of movements; Kernel and range of a linear transformation, Dimension theorem	Sem II BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-2 Linear Algebra
	Assignment	To give assignments to some students of the above courses		
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 II
	Theory	testing hypotheses, generate table values and simulate data, plotting	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares
	Practicals	7. Approximating solution to Initial Value Problems using any of the following approximate methods: (a) The Euler Method (b) The Modified Euler Method. (c) The Runge-Kutta Method. Comparison between exact and approximate results for any representative differential equation. 8. Draw the functions on given the interval and discuss the pointwise convergence:	B.Sc(H) Maths Sem-IV B	C8-Partial Differential Equations
	Practicals	testing hypotheses, generate table values and simulate data, plotting	B.Sc(H) Maths Sem-IV A	SEC-2 Computer Algebra Systems and Related Softwares

	Theory	Gaussian quadrature, Ordinary differential equation: Euler's method Modified Euler's methods: Heun method and Mid-point method, Runge-Kutta second methods: Heun method without iteration, Mid-point method and Ralston's method Classical 4th order Runge-Kutta method, Finite difference method for linear ODE.	Sem IV BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-4 Numerical Methods
	Test	To take internal lab test of the above Practicals.		
	Theory	One to one and onto linear transformations, Invertible linear transformations, Isomorphism, Isomorphic vector spaces, Orthogonal and orthonormal vectors, Orthogonal and orthonormal bases, Orthogonal complement, Projection theorem, Orthogonal projection onto a subspace; Application: Least square solutions for inconsistent systems, Non-unique least square solutions.	Sem II BA(Hons) and Bsc(Hons) Other than BSc(Hons) Mathematics	GE-2 Linear Algebra
	Assignment	To give assignment to some students of the above courses		

Dr. Garima V. Arora

Month		Topics	Course	Paper Code/Name
JAN	Theory	Computing and plotting functions in 2D, plotting functions of two variables, plotting parametric curves and surfaces, customizing and animating plots.	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems
	Practical	Computing and plotting functions in 2D, plotting functions of two variables, plotting parametric curves and surfaces, customizing and animating plots.	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems
	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	Declaring a complex number and graphical representation, algebra of complex numbers	B.Sc(H) Maths Sem-VI A	C13- Complex Analysis
	Theory	Fundamental operation with vectors in Euclidean space R^n , Linear combination of vectors, Dot product and their properties, Cauchy–Schwarz inequality, Triangle inequality, Projection vectors, Some elementary results on vector in R^n , Matrices, Gauss–Jordan row reduction, Reduced row echelon form, Row equivalence, Rank, Linear combination of vectors, Row space, Eigenvalues, Eigenvectors, Eigenspace		GE-2 (Linear Algebra)
	Tutorial	Questions based on theory classes		GE-2

FEB	Theory:	Producing table of values, piecewise defines functions, combining graphics, R as a calculator, reading and getting data into R, manipulating vectors, stem and leaf plot, histogram	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems
	Practical	Producing table of values, piecewise defines functions, combining graphics, R as a calculator, reading and getting data into R, manipulating vectors, stem and leaf plot, histogram	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems
	Theory	Characteristic polynomials, Diagonalization of matrices, Definition and examples of vector space, Some elementary properties of vector spaces, Subspace. Span of a set, A spanning set for an eigenspace, Linear independence and linear dependence of vectors, Basis and dimension of a vector space, Maximal linearly independent sets, Minimal spanning sets, Application of rank, Homogenous and nonhomogenous systems of equations		GE-2 (Linear Algebra)
	Theory	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
	Practical	Contour Integration	B.Sc(H) Maths Sem-VI A	C13- Complex Analysis
	Tutorial	Questions based on theory classes		GE-2
MARCH	Theory:	Data frames, matrices and lists, viewing and constructing data objects, summary commands and statistics for vectors, summary tables, matrices, gauss elimination, operations, minors and cofactors, working with large matrices.	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems

	Practical:	Data frames, matrices and lists, viewing and constructing data objects, summary commands and statistics for vectors, summary tables, matrices, gauss elimination, operations, minors and cofactors, working with large matrices.	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems
	Theory	Coordinates of a vector in ordered basis, Transition matrix, Linear transformations: Definition and examples, Elementary properties, The matrix of a linear transformation, Linear operator and Similarity. Application: Computer graphics- Fundamental movements in a plane, Homogenous coordinates, Composition of movements, Kernel and range of a linear transformation, Dimension theorem, One to one and onto linear transformations, Invertible linear transformations		GE-2 (Linear Algebra)
	Test	To take practical test of the syllabus covered till date		
	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
	Assignment :	To give assignment to students of both the courses		
	Practical	To plot complex functions and analyze its graph	B.Sc(H) Maths Sem-VI A	C13- Complex Analysis
	Tutorial	Questions based on theory classes		GE-2
APRIL	Theory:	Solving system of linear equations, rank and nullity of a matrix, eigenvalue, eigenvector and diagonalization, plotting in R, explore data and relations, saving graphs.	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems
	Practical	Solving system of linear equations, rank and nullity of a matrix, eigenvalue, eigenvector and diagonalization, plotting in R, explore data and relations, saving graphs.	B.Sc(H) Maths Sem-IV B	SEC-2 Computer Algebra Systems

	Theory	Isomorphism: Isomorphic vector spaces (to R^n), Orthogonal and orthonormal vectors, Orthogonal and orthonormal bases, Orthogonal complement, Projection theorem (Statement only), Orthogonal projection onto a subspace, Application: Least square solutions for inconsistent systems.		GE-2 (Linear Algebra)
	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
	Practical	To perform the Taylor series expansion of a given function $f(z)$ around a given point z .	B.Sc(H) Maths Sem-VI A	C13- Complex Analysis
	Tutorial	Questions based on theory classes		GE-2



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE
2019-2020**

Name of the Faculty: Dr Deepika Singh
political science

Department:

Semester : IV (Even)

**Paper : POLITICAL PROCESSES AND INSTITUTIONS IN
COMPARATIVE PERSPECTIVE**

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	APPROACHES TO STUDYING COMPARATIVE POLITICS; A. Political culture B. New institutionalism	B A HONOURS	: POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE
	Practicals			
	Tutorials	Discussion on 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
	<u>Test</u>	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 : Public Opinion and Survey Research

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introduction to th course Definition and characteristics of public opinion, conceptions and characteristics, debates about its role in a democratic political system, uses for opinion poll	B A PROG	Public Opinion and Survey Research
	Practicals			
	Tutorials	DISCUSSION ON SIGNIFICANCE OF PUBLIC OPINION		
FEBRUARY	Theory:	Measuring Public Opinion with Surveys: Representation and sampling (6 lectures) a. What is sampling? Why do we need to sample? Sample design.		

	Practicals:			
	Tutorials:	DISCUSSION ON MIXED ECONOMY		

	<u>Assignment</u> :	DISCUSSION ON VARIOUS ELECTION AND PUBLIC OPINION
MARCH	Theory:	b. Sampling error and non-response c. Types of sampling: Non random sampling (quota, purposive and snowball sampling); random sampling: simple and stratified
	Practicals:	
	Tutorials:	
	<u>Test</u>	Internal test

APRIL	Theory:	Survey Research (2 lectures) a. Interviewing: Interview techniques pitfalls, different types of and forms of interview b. Questionnaire: Question wording; fairness . Quantitative Data Analysis (4 lectures) a. Introduction to quantitative data analysis
	Practicals:	
	Tutorials:	DISCUSSION ON HOW TO PREPARE QUESTIONNAIRE

MAY	Theory:	b. Basic concepts: correlational research, causation and prediction, descriptive and inferential Statistics V. Interpreting polls (6 lectures) Prediction in polling research: possibilities and pitfalls Politics of interpreting polling
	Practicals:	

	Tutorials:	REVISION	
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Name of the Faculty: Dr Deepika Singh
political science

: Department:

Semester : EVEN IV

PAPER: Peace and conflict resolution (SHARED PAPER)

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	International peace and conflict resolution; sources of war International and domestic issues and trends	B A (H) SEC	Peace and conflict resolution
	Practicals			
	Tutorials	DISCUSSION ON peace and conflict		

FEBRUARY	Theory:	II. CONTINUE UNIT 1		
	Practicals:			
	Tutorials:	DISCUSSION ON VARIOUS INTERNATIONAL CONFLICT THEIR ROOT CAUSES AND MEASURES TO RESOLVE THEM .		

	<u>Assignment</u> :	PRESENTATION ON CONFLICT RESOLUTION	
MARCH	Theory:	WHAT IS CONFLICT: INTRODUCTION TO INTERNATIONAL CONFLICT RESOLUTION	
	Practicals:		

	Tutorials:	
	<u>Test</u>	Internal test
APRIL	Theory:	CURRENT PERSPECTIVE OF PEACE AND CONFLICT RESOLUTION: GRASS ROOTS LEVELS PERSEPCTIVE ON WAR AND PEACE
	Practicals:	
	Tutorials:	DISCUSSION ON VOILENCE ON WOMEN BECAUSE OF INTERNATIONAL CONFLICT

MAY	Theory:	REVISION
	Practicals:	
	Tutorials:	REVISION

DR DEEPIKA SINGH
 ASSISTANT PROFESSOR
 DEPARTMENT OF POLITICAL SCIENCE



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA COLLEGE
2019-2020**

Name of the Faculty: Dr Deepika Singh
political science

Department:

Semester : IV (Even)

**Paper : POLITICAL PROCESSES AND INSTITUTIONS IN
COMPARATIVE PERSPECTIVE**

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	APPROACHES TO STUDYING COMPARATIVE POLITICS; A. Political culture B. New institutionalism	B A HONOURS	: POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE
	Practicals			
	Tutorials	Discussion on 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
	<u>Test</u>	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 : Public Opinion and Survey Research

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introduction to th course Definition and characteristics of public opinion, conceptions and characteristics, debates about its role in a democratic political system, uses for opinion poll	B A PROG	Public Opinion and Survey Research
	Practicals			
	Tutorials	DISCUSSION ON SIGNIFICANCE OF PUBLIC OPINION		
FEBRUARY	Theory:	Measuring Public Opinion with Surveys: Representation and sampling (6 lectures) a. What is sampling? Why do we need to sample? Sample design.		

	Practicals:			
	Tutorials:	DISCUSSION ON MIXED ECONOMY		

	<u>Assignment</u> :	DISCUSSION ON VARIOUS ELECTION AND PUBLIC OPINION
MARCH	Theory:	b. Sampling error and non-response c. Types of sampling: Non random sampling (quota, purposive and snowball sampling); random sampling: simple and stratified
	Practicals:	
	Tutorials:	
	<u>Test</u>	Internal test

APRIL	Theory:	Survey Research (2 lectures) a. Interviewing: Interview techniques pitfalls, different types of and forms of interview b. Questionnaire: Question wording; fairness . Quantitative Data Analysis (4 lectures) a. Introduction to quantitative data analysis
	Practicals:	
	Tutorials:	DISCUSSION ON HOW TO PREPARE QUESTIONNAIRE

MAY	Theory:	b. Basic concepts: correlational research, causation and prediction, descriptive and inferential Statistics V. Interpreting polls (6 lectures) Prediction in polling research: possibilities and pitfalls Politics of interpreting polling
	Practicals:	

	Tutorials:	REVISION	
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**SEMESTER WISE
TEACHING PLAN (2019-
2020)**

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr Jita Mishra
Political Science

Department:

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

	<u>Assignment :</u>	Critically evaluate the negative concept of liberty,
MARCH	Theory:	Freedom , emancipation and swaraj Justice, Rawls
	Practicals:	
	Tutorials:	Swaraj Discussion on free speech
	<u>Test</u>	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

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 globalisation- 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,	B.A (P)	Human Rights, Gender and Environment

		Women's Movements in India		
	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 India 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. 7. Short Note- a) UN Environmental Programme b) Citizenship rights in India		
May	Theory:	Environmental and Sustainable Development, UN Environment Programme: Rio, Johannesburg and after, Issues of	B.A (P)	Human Rights, Gender and Environment

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



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January-June, 2019

Name of the Faculty: Dr SANTOSH KUMAR SINGH

Department: POLITICAL SCIENCE

Semester: B.A (P)-VIth

Month		Topics	Course	Paper Code/Name
January	Theory:	Democracy and institutions, Democracy and Governance Indian Democracy Indian Model of Democracy Indian Parliament, India's Party Politics, Indian Federalism	B.A (P)	Democracy and Governance
	Tutorials:	Understanding the Nature of Indian Democracy and Governance issues.		
February	Theory:	Local Governance, Political Communication Contextual Orientation of Policy Design Institutions of Policy Making	B.A (P)	Democracy and Governance
	Tutorials:	Understanding the Roots of Indian Democracy		

March	Theory:	Regulatory Institutions – SEBI, TRAI, Competition Commission Of India, Corporate Affairs.	B.A (P)	Democracy and Governance
		Lobbying Institutions: Chambers of Commerce and Industries, Trade Unions, Farmers Associations.		
	Tutorials:	Indian Democracy-Lobbying institution and Regulatory Institution		
	<u>Assignment</u>	What do you understand by the term Governance? Discuss the relationship between democracy and governance in the context of Indian Democracy.		
		Critically examine the role and significance of Indian Judiciary in the Indian democracy. Examine the role and functions of local government in India. What is Public Policy? Discuss the various stages of public policy with examples. Examine the role of regulatory institutions to the frame and implement the public policy at grass root level in India		
April	Theory	Contemporary Political Economy of Development in India: Policy Debates over Models of Development in India, Recent trends of Indian Economy, E-governance.	B.A (P)	Democracy and Governance

	Tutorials:	Understanding the Models of India's development		
	<u>Mid Term Test</u>	1. What is Lobbying Institutions? Discuss the nature and significance of lobbying institutions in public policy in India. 2. What is Public Communication? Discuss the role and significance in Indian democracy. 3. Critically examine the models of development in India. 4. What is E-governance? Discuss the Indian model of e-governance. 5. Write short notes (Any Two) a. Trade Union b. SEBI c. TRAI d. Electoral Behaviour		
May	Theory:	Dynamics of Civil Society: New Social Movements, NGO's, Media and Popular Culture.	B.A (P)	Democracy and Governance

	Tutorials:	Democracy-Governance and Civil Society		

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 XIII
	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 XIII
	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 XIII
	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 vague 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 XIII
	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? Why is Karl Marx regarded as the founder of scientific socialism? Would you describe him as evolutionary or revolutionary socialist? "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**

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		

	<u>Assignment</u> :	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.
	<u>Test</u>	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 (2019-
2020)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Namita Pandey

Department: Political Science

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Approaches to International Relations A. classical Realism of Hans J. Morgenthau B. Neo Realism of Kenneth Waltz C. Neo-liberalism of Robert Keohane and Joseph Nye D. Structural Approach of Emmanuel Wallerstein E. Dependency School, A.G Frank	B.A(Prog) Sem IV	Introduction to International Relations
	Practicals			
	Tutorials	Discussion on Politics among Nations by Hans. J Morgenthau		

FEBRUARY	Theory:	Feminist Perspective on International Relations with reference to Ann Tickner Cold War and Post Cold War Era: Consequences of the Second World War Cold War: Definitions, Nature & Origin		
	Practicals:			
	Tutorials:	Discussion on the causes and consequences of the Second World War as Hitlers War		

	<u>Assignment :</u>	Discuss the Feminist Perspective of International Relations	
MARCH	Theory:	Phases of Cold War First Phase (1945-55) Second Phase (1956-62)with special reference to the Cuban Missile Crisis Rise and Fall of Detante New Cold War with special reference to Afghan Crisis	

	Practicals:	
	Tutorials:	Discussion on Different Phases of Cold War
	<u>Test</u>	Discuss Political Realism of Hans. J Morgenthau Critically examine Wallersteins World Systems Theory
APRIL	Theory:	Collapse of Soviet Union: Causes and Consequences End of Cold War Post Cold War World Era Emerging Centres of Power (EU, China & Japan)
	Practicals:	
	Tutorials:	Discussion on China as a Global power

MAY	Theory:	India's Foreign Policy A. Basic Determinants B. Non Alignment C. India as an Emerging Power
	Practicals:	

	Tutorials:	Discussion on India's Rise as a Global Power
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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: RTI, 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
Jan-May 2020

Name of the Faculty: Geeta Jayaram Sodhi

Department: Sociology

Semester: II (Jan- May, 2020)

Month		Topic(s)	Course	Paper Code/Name
JAN	Theory	1.Plurality of the Sociological Perspective 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.Interpretive Sociology 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.Conflict Theory 2. Feminist Theory	Core Course-03	Introduction to Sociology II

	Practical	NA	NA	NA
	Tutorial	Interpretive Sociology	Core Course-03	Introduction to Sociology II
	<u>Assignment</u>	Examine the Functionalist perspective of Society	Core Course-03	Introduction to Sociology II
	Mid Sem Exam	Topics 1 and 2		
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
Jan-May 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Geeta Jayaram Sodhi

Department: Sociology

Semester: IV (Jan-May, 2020)

Month		Topics	Course	Paper Code/Name
JAN	Theory	1.Sociological Research 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. Comparative Method	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
	<u>Assignment</u> <u>Mid Sem Exam</u>	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
SRI VENKATESWARA COLLEGE
Jan-May 2020

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: IV (Jan- May, 2020)

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
	<u>Assignment</u>	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



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
Jan-May 2020

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: II (Jan-May, 2020)

Month		Topics	Course	Paper Code/Name
JAN	Theory	What is Family? 1. Historical account 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: Barrett, Cartledge and Ryan, Coontz and Shah)	GE 02	Family and Intimacy
	<u>Assignment</u>	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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (II), Semester II (January-June, 2020)

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
	Assignment (10 Marks)	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
	Mid-Semester Examination (10 Marks)	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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (Program), Semester VI (January-June, 2020)

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
	<u>Assignment (10 Marks)</u>	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 world. Elaborate.	Generic Elective 02 (GE 02)	Economy and Society
	<u>Mid-Semester Examination (10 Marks)</u>	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
SRI VENKATESWARA COLLEGE
Jan-June 2020

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: IV

Course Details : B. A. (Hons.) Core Course 08 – Sociology of Kinship

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Key Approaches in Kinship: Descent , Alliance, Cultural	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Explaining kinship through the study of descent. The study of African societies by early anthropologists Difference bw cultural and structural approach in kinship	Core Course 08	Sociology of Kinship
FEBRUARY	Theory	Concepts of family, household, domestic groups	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	How did Schneider reconceptualize kinship and its meaning? How do concepts of family and domestic cycle redefine our understanding of kinship	Core Course 08	Sociology of Kinship

MARCH	Theory	The anthropological definition of marriage Contemporary anthropological definitions of marriage Relatedness	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Exploring the definition of kinship among the Nayars, Sinhalese law Hindu marriage law Relatedness among the Malays	Core Course 08	Sociology of Kinship
	<u>Assignment 01</u>	Write a note on the structural principles underlying African kinship systems.	Core Course 08	Sociology of Kinship
APRIL	Theory	Gender and kinship Reconstructing families	Core Course 08	Sociology of Kinship
	Practical		NA	NA
	Tutorial	Interconnections of gender and kinship How do chosen families redefine kinship	Core Course 08	Sociology of Kinship
	<u>Assignment 02</u> <u>(in lieu of the mid-sem test)</u>	How are elements of biology and culture synthesized and reflected in kinship? Provide illustrations	Core Course 08	Sociology of Kinship

MAY	Theory	Questioning biological paternity/maternity with IVF	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	New reproductive technologies and the construction of identity	Core Course 08	Sociology of Kinship



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Jan-June 2020

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: VI

Course Details : B. A. (Hons.) DSE – Visual Culture

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introducing visual culture and the process of seeing The Spectacles of Modernity Critiquing the history of visual culture	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Explaining the social construction of seeing How have ways of seeing influenced our knowledge throughout history Critiquing technical modernity How can visual culture escape the dominant narrative of the West	DSE 07	Visual Culture
FEBRUARY	Theory	Narrative and visual forms of perception in contemporary life Panopticism and power Power and visibility Representing Authority in colonial India	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Global events and local narratives How did visibility become a source of power What is countervisuality How was authority symbolically represented in colonial India	DSE 07	Visual Culture

MARCH	Theory	State and Photographic Records Critical Art Representation, theatre and resistance	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Photography, technology and truth Problems and possibilities of critical art Carnival and theatre as subversive contexts	DSE 07	Visual Culture
	<u>Assignment 01</u>	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	Visual Practices and identity formation Everyday life and visibility Printed image and identity Globalism, visibility and identity	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	How does technology contribute to the restructuring of space and identity How does the practice of everyday life involving tactics and strategies help in the understanding of visibility Technologically equipped forms of visibility and the definition of the market as well as individual identity	DSE 07	Visual Culture
	<u>Assignment 02</u> <u>(in lieu of the mid-sem test)</u>	With reference to Foucault's panopticism, write a note on the different forms of discipline as witnessed in the 18 th CE plague-stricken town and the 19 th CE panoptic establishment.	DSE 07	Visual Culture

MAY	Theory	Revision	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Revision and clarification of doubts	DSE 07	Visual Culture



SEMESTER WISE TEACHING PLAN
Jan-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III (Jan-April 2020) 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 and Sexual Assaults on Women; Rewards of Rape; Recovering Subversions	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	<u>Assignment</u>	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
Jan-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III (Jan-April 2020) BA (P)

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Sex, Gender and Sexuality	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 difference between 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
	<u>Assignment</u>	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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Nupurnima Yadav

Department: Sociology

Semester: 6th B.A (Hons) (January-June, 2020)

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,	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 and Ogives)	Core Course-14	Sociological Research Methods – II
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	Practical	NA	NA	NA
	Tutorial	Supervision of their Research questions and techniques of doing research. their interview schedules and questionnaires were closely		
	<u>Mid- Semester exam (10</u>			
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.		

	<u>Project (10 Marks)</u>			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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nupurnima Yadav

Department: Sociology

Semester: VI B.A(Hons) (January-June 2020)

Paper: DSE 06 Indian Sociological Traditions

Month		Topics	Course	Paper Code/Name
January	Theory	G.S Ghurye: Caste and Race City and Civilization Radhakamal Mukerjee : 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 Mukerjee's work	DSE 06	Indian Sociological Traditions
February	Theory	Radhakamal Mukerjee : Personality, 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
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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	Irawati Karve : Gender and Kinship Leela Dube: Caste and Gender	DSE 06	Indian Sociological Traditions

	Practical	NA	NA	NA
	Tutorial	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
	<u>Mid-Semester Examination (10 Marks)</u>			

May	Theory		DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial		DSE 06	Indian Sociological Traditions



SEMESTER WISE TEACHING PLAN
January- April 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jaiswal

Department: Sociology

Semester: VI (January- April 2020)

Month		Topic(s)	Course	Paper Code/Name
February	Theory	1. Introduction to the sociology of health and medicine	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine
	Practical	NA	NA	NA
	Tutorial	Trace the origin and development of modern medicine in arriving at an understanding of sickness, disease and illness.	Discipline Specific Elective	Sociology of Health and Medicine
MARCH	Theory	1. Theoretical Orientation in Health and Illness	Discipline Specific Elective	Sociology of Health and Medicine
	Practical	NA	NA	NA
	Tutorial	examine how the concept of 'sick role' encapsulates the functional aspect of medicine as a social system	Discipline Specific Elective	Sociology of Health and Medicine.
APRIL	Theory	Negotiating Health and Illness	Discipline Specific Elective	Sociology of Health and Medicine.

ASSIGNMENTS QUESTIONS	Practical	NA	NA	NA
	Tutorial	evaluate the ways in which biomedicine has 'overmedicalized' women's health issues.	Discipline Specific Elective	Sociology of Health and Medicine.
	1. ELUCIDATE WITH APPROPRIATE EXAMPLES THE ROLE OF HEALTH CULTURE AND POPULAR PERCEPTION IN CHOOSING HEALTHCARE SYSTEMS. 2. TO BRIEFLY ANALYSE ANY ONE OF THE FOLLOWING WITH RESPECT TO ITS RELEVANCE IN CONTEMPORARY TIMES: a. Nichter, Mark and Mimi Nichter (1996) Popular Perceptions of Medicine: A South Indian Case Study. b. Qadeer, Imrana 2013 Universal Health Care in India: Panacea for whom? Indian Journal of Public Health Volume 57 Issue 4 October-December 2013 pp 225-229 c. V.Das, R.K.Das and L.Coutinho (2000). Disease Control and Immunisation: A Sociological Enquiry. EPW 35 (8/9). 625-632.			



SEMESTER WISE TEACHING PLAN
January- April 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jasiwal
Department: Sociology
Semester: V (January- April, 2020)

Month		Topics	Course	Paper Code/Name
FEBRUARY	Theory	introducing stratification	Core Course 10	Social Stratification
	Practical			
	Tutorial	HOW	Core Course 10	Social Stratification
MARCH	Theory	Theories of social stratification	Core Course 10	Social Stratification
	Practical			
	Tutorial	Critically examine the functional necessity of functionalism	Core Course 10	Social Stratification

March	Theory	Identities and Inequalities	Core Course 10	Social Stratification
	Practical		Core course 10	Social Stratification
	Tutorial	discuss the intersectionalities of race, class and gender with relevant examples	Core Course 10	Social Stratification
APRIL	Theory	MOBILITY AND REPRODUCTION	Core course 10	Social Stratification
	Practical			

	Tutorial	critically examine the role of educational system in the reproduction of cultural capital	CORE COURSE 10	SOCIAL STRATIFICATION
ASSINGMENT QUESTIONS: 1. How is Marxian notion of class different from Weberian notion of class? 2. What is gendered stratification? Discuss with suitable examples.				



SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Semester II/IV/VI
(Jan-April 2020)

Name of the Faculty: Dr Meenakshi Kuhar

Department: Biochemistry

Month		Topics	Course	Paper Code/Name
		Unit 2: Cloning vectors for prokaryotes	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engineering and Biotechnology
January	Theory	Unit 4: Enzyme Kinetics	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 4: Gene mutations and repair	BCH GE-4	Gene Organization, Expression and Regulation
	Practical	Exercise1: Partial purification of acid phosphatase enzyme Exercise2: Assay of enzyme activity and specific activity of acid phosphatase enzyme	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 8: Verification of Beer's law	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics



SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester II/IV/VI

Name of the Faculty: Dr Meenakshi Kuhar

Department: Biochemistry

Month		Topics	Course	Paper Code/Name
February		Unit 4: Introduction of DNA into cells and selection for recombinants	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engineering and Biotechnology
	Theory	Unit 4: Enzyme Kinetics	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 5: Transcription of genes	BCH GE-4	Gene Organization, Expression and Regulation
	Practical	Exercise 3: Effect of pH on enzyme activity Exercise 4: Determination of K_M and V_{max}	B Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 9: Determination of molar extinction coefficient Exercise 10: Estimation of proteins using spectrophotometer	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics



SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester II/IV/VI

Name of the Faculty: Dr Meenakshi Kuhar

Department: Biochemistry

Month		Topics	Course	Paper Code/Name
March	Theory	Unit 5: Methods for clone identification	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engineering and Biotechnology
		Unit 5: Enzyme inhibition	B. Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 6: RNA processing	BCH GE-4	Gene Organization, Expression and Regulation
	Practical	Exercise 5: Calculation of K_i for inhibitor	B. Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 10: Estimation of nucleic acids using spectrophotometer	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics



SEMERSTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Semester II/IV/VI

Name of the Faculty: Dr Meenakshi Kuhar

Department: Biochemistry

Month		Topics	Course	Paper Code/Name
April	Theory	Unit 8: Expression of cloned genes	B Sc (H) Biochemistry III Year Semester VI	C 13 Genetic Engineering and Biotechnology
		Unit 8: Application of enzymes	B. Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Unit 7: Protein synthesis	BCH GE-4	Gene Organization, Expression and Regulation
	Practical	Exercise6: Assay of enzyme lactate dehydrogenase	B. Sc (H) Biochemistry I Year Semester II	C-4 Enzymes
		Exercise 11: Determination of CMC of a detergent	B. Sc (H) Biological Sciences, I Year Semester II	BS C-3 Biophysics



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr.N.Latha

Department: BIOCHEMISTRY

Semester: II/IV/VI (EVEN SEMESTER)

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introduction to Immunity Unit 1 Cells and organs of the immune system, Hematopoiesis, cells of the immune system, primary and secondary lymphoid organs and tissues (MALT).	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Unit 1 Introduction to bioinformatics, Computer fundamentals - programming languages in bioinformatics, role of supercomputers in biology. Historical background. Scope of bioinformatics - genomics, proteomics, Computer aided drug design (structure based and ligand based approaches) and Systems Biology. Applications	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	SEC 4: BIOINFORMATICS
	Practicals	Bioinformatics and computational biology: An overview, Biological databases and Archives: sequence databases, structure databases, microbial databases, and eukaryotic databases.	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY Hons.) Year, Semester II	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
		Purification of immunoglobulins.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Sequence retrieval (protein and gene) from NCBI. • Structure downloads (protein and DNA) from PDB. • Molecular file formats - FASTA, GenBank, Genpept, GCG, CLUSTAL, Swiss-Prot, FIR. • Molecular viewer by visualization software.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
FEBRUARY	Theory	Unit 4 Antibody structure and function : Structure and distribution of classes and subclasses of immunoglobulins (Ig), Ig fold, effector functions of antibody, antigenic determinants on Ig and Ig super family., Unit 5 Generation of receptor diversity: Dreyer-Bennett hypothesis, multigene organization of Ig locus, mechanism of V region DNA rearrangement, ways of antibody diversification	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Unit 2 Biological databases and data retrieval Introduction to biological databases - primary, secondary and composite databases, NCBI, nucleic acid databases (GenBank, EMBL, DDBJ, NDB), protein databases (PIR, Swiss-Prot, TrEMBL, PDB), metabolic pathway database (KEGG, EcoCyc, and MetaCyc), small molecule databases (PubChem, Drug Bank, ZINC, CSD). Structure viewers (Ras Mol, J mol), file formats. Sequence Alignment: Similarity, identity and homology. Alignment – local and global alignment, pairwise and multiple sequence alignments, alignment algorithms, amino acid	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester III	SEC 4: BIOINFORMATICS

		substitution matrices (PAM and BLOSUM), BLAST and CLUSTALW		
	Practicals:	Genomics: Genome and genes, gene organization, prokaryotic and eukaryotic protein structure, control switches, ORF, promoters, ESTs, genome analyses, gene prediction, statistical models, mathematical models, sequence alignment, comparative genomics, genomics in preservation of endangered species, SNPs., Gene Prediction Tools (GeneScan)	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
		Assays based on precipitation reactions - Ouchterlony double diffusion (ODD) and Mancini radial immunodiffusion, Assays based on agglutination reactions - Blood typing (active) & passive agglutination	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		BLAST suite of tools for pairwise alignment, Multiple sequence alignment using CLUSTALW.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
MARCH	Theory	Unit 6 Biology of the B lymphocyte, Antigen independent phase of B cell maturation and selection, humoral response – T-dependent and T-independent response, anatomical distribution of B cell populations, Unit 7 Complement system : Complement activation by classical, alternate and MB lectin pathway, biological consequences of complement activation, regulation and complement deficiencies	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Unit 4 Phylogenetic analysis , Construction of phylogenetic tree, dendrograms, methods of construction of phylogenetic trees - maximum parsimony, maximum likelihood and distance methods	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
	Practicals	Sequence alignment using BLASTn, BLASTp, CLUSTALW. Gene finding tools- GenScan, GLIMMER	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
		Enzyme linked immune-sorbent assay (ELISA), DOTBLOT,	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Generating phylogenetic trees, Phylogenetic analysis	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
	Test	Unit 1 Cells and organs of the immune system, Hematopoiesis, cells of the immune system, primary and secondary lymphoid organs and tissues (MALT). Unit 4 Antibody structure and function : Structure and distribution of classes and subclasses of immunoglobulins (Ig), Ig fold, effector functions of antibody, antigenic determinants on Ig and Ig super family.,	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY

		Unit 1 Introduction to bioinformatics, Computer fundamentals, Historical background. Scope of bioinformatics - genomics, proteomics, design (structure based and ligand based approaches) and Systems Biology. Applications of bioinformatics	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester III	SEC 4: BIOINFORMATICS
		Bioinformatics and computational biology: An overview, Biological databases and Archives: sequence databases, structure databases, microbial databases, and eukaryotic databases.	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY (Hons.)	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
APRIL	Theory	Unit 11 Tolerance, autoimmunity and hypersensitivity: Organ specific and systemic autoimmune diseases, possible mechanisms of induction of autoimmunity, Gell and Coombs classification, IgE mediated (Type I) hypersensitivity, antibody , antibody mediated cytotoxic (Type II) hypersensitivity, immune complex mediated (type III) hypersensitivity and delayed type (Type IV) hypersensitivity.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Protein structure prediction and analysis , Levels of protein structure. Protein tertiary structure prediction methods - homology modeling, fold recognition and ab-initio methods. Significance of Ramachandran map	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
		Amino acids :Structure and classification, physical, chemical and optical properties of amino acids	B.Sc. BIOCHEMISTRY (Hons.) I Year, Semester I	CBCS C1: Molecules of Life
	Practicals:	Introduction to proteomics ProtParam, GOR, nnPredict, SWISSMODEL, phylogenetic analyses CADD	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
		Immunoblot, Value Added Experiments	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Primary sequence analyses (ProtParam). Secondary structure prediction (GOR, nnPredict). • Tertiary structure prediction (SWISSMODEL). • Protein structure evaluation - Ramachandran map (PROCHECK	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
	Assignment	Introduction to Immunity Unit 1 Cells and organs of the immune system, Hematopoiesis, cells of the immune system, primary and secondary lymphoid organs and tissues (MALT), Unit 4 Antibody structure and function : Structure and distribution of classes and subclasses of immunoglobulins (Ig), Ig fold, effector functions of antibody, antigenic determinants on Ig and Ig super family., Unit 5 Generation of receptor diversity: Dreyer-Bennett hypothesis, multigene organization of Ig locus, mechanism of V region DNA rearrangement, ways of antibody diversification	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY

		Unit 2 Biological databases and data retrieval Introduction to biological databases, Protein structure prediction and analysis, Levels of protein structure. Protein tertiary structure prediction methods - homology modeling, fold recognition and ab-initio methods. Significance of Ramachandran map, BLAST suite of tools for pairwise alignment, Multiple sequence alignment using CLUSTALW.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
		Bioinformatics and computational biology: An overview, Biological databases and Archives: sequence databases, structure databases, microbial databases, and eukaryotic databases.	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
MAY	Theory:	Regulation of Immune Response, Overview of Techniques in Immunology	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Unit 6 Genomics Introduction to genomics, comparative and functional genomics, gene structure in prokaryotes and eukaryotes, gene prediction methods and tools.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS
	Practicals:	Revision of practicals, Mock Practical Examination	P G DIPLOMA IN MOLECULAR & BIOCHEMICAL TECHNOLOGY	PGD MB 201: BIOPHYSICAL TECHNIQUES-II
		Revision of practicals, Mock Practical Examination	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH -C14 : IMMUNOLOGY
		Revision of practicals & Mock Practicals.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	SEC 4: BIOINFORMATICS

SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Anju Kaicker

Department: Biochemistry

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	TCR, structure & development : Cell mediated immunity	PGDMB	PGDMB 203
		Historical perspectives of immunity, Innate immune mechanisms	TBS	BS C-13
	Practicals	PAGE SDS PAGE, determination of molecular weight	PGDMB	PGDMBL 201
		IgG purification Dot ELISA	PGDMB	PGDMBL 203
	Tutorials			
FEBRUARY	Theory:	Cytokines, properties and various functions Complement pathways and functions, regulation of the pathway	PGDMB	PGDMB 103
		Antigen, Antibody and reactions, Complement pathways & regulation	TBS	BS C-13
	Practicals:	Silver staining of gels Zymograms	PGDMB	PGDMBL 101
		Sandwich ELISA Indirect ELISA	PGDMB	PGDMBL103
	Tutorials:			

	<u>Assignment :</u>			
MARCH	Theory:	Vaccines: Active and passive immunization, types of vaccines Transplantation, Immune response to infectious diseases	PGDMB	PGDMB 103
		Antibody production and Diversity, innate immunity in plants, transplantation	TBS	BS C-13
	Practicals:	Western Blotting 2D PAGE	PGDMB	PGDMBL 201
		Immunoblotting	PGDMB	PGDMBL 203
	Tutorials:			
	<u>Test</u>			
APRIL	Theory:	Cancer and immune response ,Autoimmunity Systemic & organ specific diseases	PGDMB	PGDMB 203
		Resistance genes in plants, ETI & PTI, improving plant resistance by genetic engineering, vaccines	TBS	BS C 13
	Practicals:	Revision exercises and final practical examination	PGDMB	PGDMBL 201&203
	Tutorials:			



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

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

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introduction to Animal Immunity, Haematopoiesis, Granulocytes- Structure and function.	B.Sc. BIOLOGICAL Sc. (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms.
		Introduction to virus, viral structure , classification and pathogenesis.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease.
		<i>Gastrointestinal and hepatic physiology</i> - 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. BIOCHEMISTRY Hons.) II Year, Semester IV	BCH C8: Human Physiology
	Practicals	Isolation of PBMNC, DID SRID, IEP.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms
		Determination of PCV, Bleeding time, clotting time, RBC count, WBC count,	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	
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
		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
		<i>Renal physiology</i> - 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 kidney function. Glomerular nephritis. Dialysis: Hemodialysis and peritoneal dialysis. Diuretics.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	. BCH C-8 Human Physiology

	Practicals:	Isolation, quantification of IgG from human sera using ion exchange chromatography. Counter immunoelectrophoresis, Rocket electrophoresis and splenocyte isolation.	B.Sc. BIOLOGICAL Sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms
		Estimation of Haemoglobin, calculation of haematological indices, TIBC, DLC and Serum protein electrophoresis.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	
MARCH	Theory	Antigen presentation, T-cell Maturation and Activation. Overview of cell mediated immunity. AutoImmunity.	(Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms
		HIV, Polio, Rabies and dengue virus. Protozoal infections: classification of protozoa, Amoebiasis- aetiology, life cycle, pathogenesis, infection and therapy. Giardiasis- aetiology, life cycle, pathogenesis, infection and therapy.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester VI	BCH DSE-4 Molecular basis of Infectious Disease
		Sex determination and differentiation. Development of female and male genital tracts. Spermatogenesis, capacitation and transport of sperm, blood testis barrier. Ovarian function and its control. Uterine changes, fertilization and implantation. Placenta as a feto- maternal unit, gestation and parturition	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C8 : Human Physiology
	Practicals	Structural defences in plants, Estimation of ROS in plants and identification of defense related secondary metabolites in plants.	B.Sc. BIOLOGICAL sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms
		Histology dry lab, case studies, serum LDH isozyme identification by electrophoresis	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C8 : Human Physiology
	<u>Test</u>	Midterm test for Molecular physiology. Midterm test for MBID Midterm test for Enzymes Midterm test for Defence mechanisms	B.Sc. BIOCHEMISTRY (Hons.) III Year- Sem V, II Year -Sem IV, I Year-Sem II	BCH DSE-4 Molecular basis of Infectious Disease BCH C8 –Human Physiology
	<u>Assignment</u>		B.Sc. BIOLOGICAL sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms

		Presentation on Viral infection by students.	B.Sc. BIOCHEMISTRY (Hons.) III Year, Semester V	BCH DSE-4 Molecular basis of Infectious Disease
		Assingment on clinical cases for LFT,KFT and Hematology	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C 8: Human physiology
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
		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
		Central Nervous system. Peripheral Nervous system. Blood brain barrier and CSF. Structure and maintenance of neurons. Functional classes of neurons. Membrane potentials: Resting Membrane Potential, Graded potentials, Action potential. Synapse: excitatory and inhibitory. Temporal and spatial summation. Neurotransmitters and neuromodulators (definition with examples). Somatic sensation: definition and cellular pathways of pain transmission and modulation. Physiology of EEG, sleep.Learning and memory.	B.Sc. BIOCHEMISTRY (Hons.) II Year, Semester IV	BCH C 8: Human Physiology
		Repeat practicals	B.Sc. BIOLogical Sc (Hons.) III Year, Semester VI	BSC C 13 Defence mechanisms
	Practicals:	Repeat practicals	B.Sc. BIOCHEMISTRY (Hons.) IYYear, Semester IV	BCH C 8: Human Physiology



**SEMESTER WISE TEACHING
PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Shalini Sen

Department: Biochemistry

B.Sc.(H) Biochemistry, Semester VI; P.G. Diploma-Semester II

Month		Topics	Course	Paper Code/Name
Jan	Theory	Unit 1. Overview of recombinant DNA technology. Restriction and modification systems, restriction endonucleases and other enzymes used in manipulating DNA molecules, separation of DNA by gel electrophoresis. Extraction and purification of plasmid and bacteriophage DNA.	BSc.(H) Biochemistry Semester VI	BCH C13 Genetic Engineering and Biotechnology
		Unit 2. Blotting Techniques: Southern blot and factors affecting DNA transfer, Northern blot, Western blot; colony and plaque lift, dot blot.	P.G.Diploma in Molecular and Biochemical Technology Semester II	PGDMB 201 Biophysical Techniques 2
		Unit 3. 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 Unit 5. Characterization of cloned DNA : Restriction mapping, DNA sequencing (dideoxy chain termination, chemical degradation, pyrosequencing, shotgun sequencing and contig assembly synthesis.	P.G.Diploma in Molecular and Biochemical Technology Semester II	PGDMB 202 Recombinant DNA Technology II
	Practicals	1. Preparation of competent cells of <i>E.coli</i> 2. Transformation of competent <i>E.coli</i> cells with	P.G.Diploma in Molecular and Biochemical Technology Semester II	PGDMB L205 Recombinant DNA Technology II

		plasmid DNA.		
	Internal assessment	Class Discussions, Presentations by students of PG Diploma		
February	Theory	Unit 1. Restriction Mapping, RFLPs, Unit 3. Ligation of DNA molecules. DNA ligase, sticky ends, blunt ends, linkers and adapters. Synthetic oligonucleotides, synthesis and use. Unit 6. Fundamentals of polymerase chain reaction, designing primers for PCR. Studying PCR products. Cloning PCR products. Real time PCR.	B.Sc.(H) Biochemistry Semester VI	BCH C13 Genetic Engineering and Biotechnology
		Unit 3.Centrifugation : Principle, instrumentation and applications Unit 6. Mass Spectroscopy (MS)	P.G.Diploma in Molecular and Biochemical Technology Semester II	PGDMB 201 Biophysical Techniques 2
		Unit 6. Polymerase Chain Reaction and its applications: components of the PCR, importance of primer designing, various thermostable enzymes vs Taq polymerase. Applications of PCR.	P.G. Diploma In Molecular and Biochemical Technology Semester II	PGDMB 202 RDT II

	Practicals :	1. To amplify a gene using PCR. 2. Calculation of the phage titre with a phage titration kit.	PGD in Mol and Biochem technology Sem II	PGDMB L 205 RDT II
	Internal Assessment	Class Test -1 for all courses		
March	Theory	Unit 7 DNA sequencing by Sanger's method, modifications based on Sanger's method. Automated DNA sequencing. Pyrosequencing. Unit 9 Site-directed mutagenesis and protein engineering	BSc.(H) Biochemistry Semester VI	BCH C13 Genetic Engineering and Biotechnology
		Unit 6 (contd). Yeast two-hybrid systems, analyzing protein interactions by fluorescence resonance energy transfer (FRET), protein fragment complementation(PCA). Yeast surface display. Far Western	P.G. Diploma In Molecular and Biochemical Technology Semester II	PGDMB 201 Biophysical Techniques 2
		Unit 8. Site directed mutagenesis(cassette mutagenesis, primer extension method, overlap extension method, megaprimer method), selection against parental phenotype. Protein engineering	P.G. Diploma In Molecular and Biochemical Technology Semester II	PGDMB 202 RDT II
	Practicals	To study the effect of alkaline phosphatase on plasmid recircularization	P.G. Diploma In Molecular and Biochemical Technology Semester I	PGDMB L 105 RDT I

		Midterm Tests		
April	Theory	Unit 9 (contd) Production of recombinant insulin, hGH, factor VIII, recombinant vaccines. Gene therapy. Plant genetic engineering: herbicide resistance, ethics	B.Sc.(H) Biochemistry Semester VI	BCH C13 Genetic Engineering and Biotechnology
		Unit 5. Fundamentals of fermentation technology: Batch, fed batch and continuous cultures, stirred tank reactors and airlift fermentors, downstream processing.	P.G. Diploma In Molecular and Biochemical Technology Semester II	PGDMB 201 Biophysical Techniques 2
		Unit 9. Applications of recombinant DNA technology : Transgenic animals, Transgenic plants, Gene therapy, Pharmaceutical products. Unit 11. Safety of recombinant DNA technology and ethical issues: Restriction and regulation for the release of Bt crops etc.	P.G. Diploma Biochemical Technology and Biotechnology Semester II	PGDMB 202 RDT II
	Practical	Repetition of any practical, as required.	P.G. Diploma In Molecular and Biochemical Technology Semester II	PGDMB L 205 RDT II



SEMESTER WISE TEACHING PLAN (EVEN SEM 2020)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Vandana Malhotra
Semester: IV, VI, B. Sc Biological Sc (Sem IV)

Department: BIOCHEMISTRY

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1 Structure of DNA No. of hours: 6 DNA structure, features of the double helix, various forms of DNA, denaturation and reassociation of DNA.	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester IV	BCH C-9: Gene organization, Replication and Repair
		Unit 1+2 Overview of diseases caused by Bacteria Introduction to bacterial diseases, pathogenicity, reservoir, steps in infection and pathogenesis	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester VI	BCH-DSE4 Molecular basis of Infectious diseases
		Unit 1. Introduction to Recombinant DNA technology Overview of recombinant DNA technology. Restriction and modification	B. Sc (H) Biological Science II year Semester IV	BS SEC-6 RDT
	Practicals	- Ultraviolet absorption spectrum of DNA and RNA. - Determination of DNA and RNA concentration by A_{260} nm Value added: To determine absorption maxima for purines and pyrimidine bases	B.Sc. BIOCHEMISTRY (Hons) II Year, Semester IV	BCH C-9: Gene Organization, Replication and Repair
		To observe permanent slides of <i>P. falciparum</i>, <i>M. tuberculosis</i> and <i>Leishmania</i>	B.Sc. BIOCHEMISTRY (Hons) III Year Semester VI	BCH-DSE4 Molecular basis of Infectious diseases
		- Preparation of media and autoclaving - Preparation of Reagents	B. Sc (H) Biological Science II year Semester IV	BS SEC-6 RDT
	Internal assessment			
FEBRUARY	Theory	Unit 1. Structure of DNA (CONTD)	B.Sc. BIOCHEMISTRY (Hons) II Year Semester IV	BCH C-9: Gene organization, Replication and Repair
		Unit 3. Replication of DNA Supercoiling of DNA and its importance, topoisomerases, critical role of topoisomerases in cell, topoisomerase inhibitors and their application in medicine.		
		Unit 2: Overview of diseases caused by Bacteria Detailed study of tuberculosis: History, causative agent, molecular basis of host specificity, infection and pathogenicity	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester VI	BCH-DSE4 Molecular basis of Infectious diseases

		Unit 1. Introduction to Recombinant DNA technology enzymes used in manipulating DNA molecules, separation of DNA by gel electrophoresis. Extraction and purification of plasmid DNA.	B. Sc (H) Biological Science II year Semester IV	SEC RDT
	Practicals:	• Verification of Chargaff's rule by paper chromatography. • Continuous Evaluation I	B.Sc. BIOCHEMISTRY (Hons) II Year Semester IV	BCH C-9: Gene Organization, Replication and Repair
		• Acid fast staining • Gram staining • PCR based diagnosis (TB)	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester VI	BCH-DSE4 Molecular basis of Infectious diseases
		• Digestion of Plasmid DNA • Agarose Gel electrophoresis • Isolation of chromosomal DNA from <i>E. coli</i> • Primer Designing and setting up a PCR	B. Sc (H) Biological Science II year Semester IV	SEC-6 RDT
	Internal Assessment	Class Test and Assignment		
MARCH	Theory	Unit 3. Replication of DNA The chemistry of DNA synthesis, DNA polymerase, the replication fork, origin of replication, enzymes and proteins in DNA replication, various modes of replication, stages of replication of <i>E. coli</i> chromosome, relationship between replication and cell division, replication in eukaryotes. Comparison of replication in prokaryotes and eukaryotes. Inhibitors of DNA replication and application in medicine.	B.Sc. BIOCHEMISTRY (Hons) II Year Semester IV	BCH C-9: Gene organization, Replication and Repair
		Unit 2: Overview of diseases caused by Bacteria Diagnostics, Therapeutics, inhibitors and vaccines. Drug resistance and implications on public health. Other bacterial diseases including Typhoid, Pertussis, Cholera and Tetanus	B.Sc. BIOCHEMISTRY (Hons) III Year, Semester VI	BCH-DSE4 Molecular basis of Infectious diseases
		Unit 2. Cloning vectors for Prokaryotes and Eukaryotes Ligation of DNA molecules. DNA ligases, sticky ends, blunt ends, Plasmids and bacteriophages as vectors for gene cloning	B. Sc (H) Biological Science II year Semester IV	SEC-6 RDT
	Practicals	• Determination of Melting Temperature (T_m) • Repeat any previous experiment	B.Sc. BIOCHEMISTRY (Hons) II Year Semester IV	BCH C-9: Gene Organization, Replication and Repair

		Repeat any previous experiment	B.Sc. BIOCHEMISTRY (Hons) III Year Semester VI	BCH-DSE4 Molecular basis of Infectious diseases
		- Plasmid DNA isolation - Competent cells preparation - Transformation - Blue white screening	B.Sc Biological Science II yr Semester IV	SEC-6 RDT
	Internal Assessment	Assignments and Class Tests for all courses will be given to revise the syllabus done so far. Students who did not clear first test will be given a chance to appear for a retest.		
APRIL	Theory	Unit 2. Replication Unit 5. Molecular basis of Mutation Importance of mutations in evolution of species. Types of mutations - transition, transversions, frame shift mutations, mutations induced by chemicals, radiation, transposable elements, Ames test Unit 2: Bacterial disease – Pneumonia Unit 5. Overview of diseases caused by other organisms Fungal diseases, General characteristics. Medical importance of major groups, pathogenesis, treatment. Unit 3. Introduction of DNA into Cells 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. Identification of recombinant phages. Methods for clone identification: The problem of selection, direct selection, marker rescue. 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 Unit 4. Applications of RDT Applications in medicine, production of recombinant pharmaceuticals such as insulin, human growth hormone, factor VIII. Recombinant vaccines. Gene therapy. Applications in agriculture - plant genetic engineering, herbicide resistant crops, problems with genetically modified plants, safety concerns.	B.Sc. BIOCHEMISTRY (Hons) II Year Semester IV B.Sc. BIOCHEMISTRY (Hons) III Year Semester VI B. Sc Biological Science II yr Semester IV	BCH C-9: Gene organization, Replication and Repair BCH-DSE4 Molecular basis of Infectious diseases SEC-6 RDT

		Introduction to DNA sequencing		
	Practical	- Chromosomal DNA isolation - Mock practical exam	B.Sc. BIOCHEMISTRY (Hons) II Year Semester IV	BCH C-9: Gene organization, Replication and Repair
		- Revision - Mock practical exam	B.Sc. BIOCHEMISTRY (Hons) III Year Semester VI	BCH-DSE4 Molecular basis of Infectious diseases
		- Mock Evaluation - Repeat experiments	B. Sc Biological Science II yr Semester IV	SEC-6 RDT



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NITIKA KAUSHAL

Department: BIOCHEMISTRY

Semester: II/IV/VI (2019-20)

Month		Topics	Course	Paper Code/Name
January	Theory	Unit 1: Intracellular, extracellular and interstitial fluid. Homeostasis, control system and their components. Plasma as an extracellular fluid, RBC	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	Estimation of proteins using UV-absorbance and Biuret method.	B Sc (H) Biochemistry	BCH C3: Proteins
		Purification of immunoglobulins.	B Sc (H) Biochemistry	BCH C14: Immunology
		No students	B. Sc (H)	BCH GE3: Proteins and Enzymes
February	Theory	Unit 1: molecular mechanism of blood coagulation, role of vitamin K in coagulation, anticoagulant and fibrinolytic systems. Anemias, polycythemia, haemophilia and thrombosis.	B Sc (H) Biochemistry	BCH C-8: Human Physiology
		Unit 6: Bone structure and formation, Physiology of muscle contraction in striated and non-striated muscle.		
		Unit 3: Antigens and haptens, factors that dictate immunogenicity, B and T cell epitopes.	B Sc (H) Biochemistry	BCH C14: Immunology
		Unit 8: 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.		

		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	1. Estimation of proteins using Lowry/Bradford method. 2. Determination of isoelectric pH of casein.	B Sc (H) Biochemistry	BCH C3: Proteins
		1. Assays based on precipitation reactions - Ouchterlony double diffusion (ODD) and Mancini radial immunodiffusion. 2. Assays based on agglutination reactions - Blood typing (active)	B Sc (H) Biochemistry	BCH C14: Immunology
		1. Quantitative determination of DNA and RNA by absorbance at 260 nm and using A260/A280 ratio to distinguish between them. 2. Estimation of DNA by DPA method. 3. Estimation of RNA by Orcinol.	B. Sc (H)	BCH GE4: GOER
March	Theory	Unit 2: Pressure, flow and resistance. Anatomy of heart. Physiology of the cardiac muscle, automaticity of the cardiac muscle contraction, excitation contraction coupling, relationship between cardiac cycle, heart sound, ventricular volumes and the ECG, control of cardiac function and output. The arterial system, venous system, the microcirculation and mechanics of capillary fluid exchange. Control of blood flow to the tissues. Portal circulations. Arterial pressure and its regulation. Hypertension, congestive heart disease, atherosclerosis and myocardial infarction.	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	1. Isolation of lymphocytes from blood and spleen 2. DOT blot	B Sc (H) Biochemistry	BCH C14: Immunology
		Isolation of chromosomal DNA from <i>E. coli</i> . Evaluation	B. Sc (H)	BCH GE4: GOER

		Estimation of carotene/ascorbic acid / phenols/ tannins in fruits and vegetables Culture of plants (explants) Evaluation	B Sc (H) Biochemistry	BCH DSE 7: Plant Biochemistry
<u>April</u>	Theory	Unit 3: Organization of the pulmonary system. Mechanism of respiration, pulmonary ventilation and related volumes, pulmonary circulation. Principles of gas exchange and transport. Regulation of respiration. Pulmonary edema and regulation of pleural fluid. Hypoxia, hypercapnia, pulmonary distress, emphysema, ARDS.	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	Immunoblot Evaluation	B Sc (H) Biochemistry	BCH C14: Immunology
		Isolation of total RNA from yeast cells. Evaluation	B. Sc (H)	BCH GE4: GOER
		Extraction and assay of Urease from Jack bean Evaluation	B Sc (H) Biochemistry	BCH DSE 7: Plant Biochemistry
<u>May</u>	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	Mock practicals	B Sc (H) Biochemistry	BCH C14: Immunology
		Mock practicals	B. Sc (H)	BCH GE4: GOER
		Mock practicals	B Sc (H) Biochemistry	BCH DSE 7: Plant Biochemistry



SEMESTER WISE TEACHING PLAN-2019-20 (Even SEM)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kameshwar Sharma YVR
Assistant Professor
Semester: II/IV/VI

Department: Biochemistry

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	• Introduction - Photosynthetic Complex - Light Reaction	B.Sc(H) Biochemistry Sem VI	BCH DSE-5 PLANT BIOCHEMISTRY
		• Biomolecules Amino acids Nucleic acids	B.Sc(H) Biological Science - Sem II	BSC3 BIOPHYSICS
	Practicals	• Estimation of proteins using UV absorbance and Biurette method	B.Sc(H) Biochemistry – Sem II	BCH C-3 PROTEINS
		• Introduction to Bioinformatics • J mol and Java • PDB • BLAST • Primary Structure Prediction and Consensus	B.Sc(H) Biochemistry Sem IV	BCH SEC-4 : BIOINFORMATICS
		• Glucose Estimation (GOD – POD) • Cholesterol Estimation	B.Sc(H) Biological Science - Sem IV	BSC3 METABOLISM AND INTEGRATION
	Tutorials			

FEBRUARY	Theory:	- Photosystem Continuation... Photophosphorylation, Carbon Assimilation, Photorespiration - Biomolecules Carbohydrates Lipids	B.Sc(H) Biochemistry Sem VI B.Sc(H) Biological Science - Sem I	BCH DSE-5 PLANT BIOCHEMISTRY BSC3 BIOPHYSICS
	Practicals:	- Estimation of proteins using Lowry's / Bradford's method. - Determination of isoelectric pH of casein. - Ammonium sulfate fractionation of proteins - Clustal Omega - Transmembrane Prediction - Tertiary Structure Prediction Evaluation - Gene Structure Prediction (GENSCAN) - Bilirubin Estimation - Estimation of Creatinine - Estimation of SGOT and SGPT (LFT)	B.Sc(H) Biochemistry – Sem II B.Sc(H) Biochemistry Sem IV B.Sc(H) Biological Science - Sem IV	BCH C-3 PROTEINS BCH SEC-4 : BIOINFORMATICS BSC3 METABOLISM AND INTEGRATION
	Tutorials:	Class Tests / assignments		
MARCH	Theory:	- Plant Hormones - Plant Morphogenesis - Secondary Metabolites - Alkaloids (Online notes and ppt)* - Spectroscopy (Online notes and ppt)*	B.Sc(H) Biochemistry Sem VI B.Sc(H) Biological Science - Sem I	BCH DSE-5 PLANT BIOCHEMISTRY BSC3 BIOPHYSICS

MAY	Practicals:	Preparation of Mock Practicals and Main Practical Examinations	B.Sc(H) Biochemistry – Sem II B.Sc(H) Biochemistry Sem IV B.Sc(H) Biological Science - Sem IV	BCH C-3 PROTEINS BCH SEC-4 : BIOINFORMATICS BSC3 METABOLISM AND INTEGRATION
	Tutorials:			
	Theory:	Conduct of Theory Exams		

Dr. Kameshwar Sharma YVR



SEMESTER WISE TEACHING PLAN 2019-2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. NIMISHA SINHA

Department: BIOCHEMISTRY

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 1 Structure of genes and chromosomes No. of HOURS: 8 Definition of a gene, Introduction to chromosomal organization of genes CLASSES STARTED ONLY AFTER 23 rd JAN	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS BCH GE-3 : Gene Organization Expression and Regulation
	Practical	- Isolation of Plasmid DNA - Restriction enzyme digestion of plasmid DNA and size estimation of fragments. - Isolation of plasmid DNA from <i>E.coli</i> and restriction enzyme digestion and molecularweight 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)	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 4 Recombination and transposition of DNA No. of HOURS: 12 Homologous recombination, proteins and enzymes in recombination, site-specific recombination, serine and tyrosine recombinases, biological roles of site-specific recombination, transposition, three classes of transposable elements, importance of transposable elements in horizontal transfer of genes and evolution.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-09: Gene Organization Replication and Repair
		Unit 1 contd...Chromosomal organization in viruses, bacteria and eukaryotes. Unit 2 Replication of genomes No. of HOURS: 12 General features of DNA replication, properties of prokaryotic and eukaryotic DNA polymerases.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS BCH GE-3 : Gene Organization Expression and Regulation
	Practical	- Designing of primers for any selected genes. - Demonstration of PCR technique. - Repeat plasmid isolation - Preparation of competent cells by calcium chloride method - Transformation of E coli cells with plasmid DNA	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 ORGANIZATION 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.	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS DSE 9: Plant Biochemistry
		Unit 6: Cell and tissue culture techniques, types of cultures: organ and explants culture, callus culture, cell suspension culture and protoplast culture.		
		Unit 6 Various modes of DNA repair No. of HOURS: 8 Replication errors and mismatch repair system	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-09: Gene Organization Replication and Repair
		Unit 2 contd....Replication of DNA and telomeres in linear chromosomes. Replication of RNA genomes. Unit 3 Recombination of DNA No. of HOURS: 4 Homologous genetic recombination	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS BCH GE-3 : Gene Organization Expression and Regulation
	Practical	- Preparation of competent cells and transformation - Blue white selection - Continuous evaluation - Repeat any previous experiment	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg, and Biotechnology
		- Repeat of any previous experiment	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES

		Continuous evaluation - Isolation of chromosomal DNA from E. coli cells.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09 GENE ORGANIZATION REPLICATION AND REPAIR
	<u>Test</u>	ASSIGNMENTS AND MID TERM EXAMS		
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 6 contd...repair of DNA damage, direct repair, base excision repair, nucleotide excision repair, recombination repair, translesion DNA synthesis.	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-09: Gene Organization Replication and Repair
		Unit 3 contd....Holliday model, proteins and enzymes mediating recombination. Unit 8 Regulation of gene expression No. of HOURS: 6 Regulation of transcription in prokaryotes, concept of operons. Lac operon - control by negative and positive regulatory proteins, Trp operon - control by attenuation. Regulation of transcription in eukaryotes, regulatory sequences - enhancers, silencers response elements, nucleosome alterations, DNA-protein interactions and RNA interference.	B.Sc. BIOCHEMISTRY Hons.) IYear, Semester IV	CBCS BCH GE-3 : Gene Organization Expression and Regulation
	Practical	Revision and Preparation for Viva Mock Practical Exam	B.Sc. BIOCHEMISTRY Hons.) III Year, Semester VI	CBCS: BCH C- Genetic Engg. and Biotechnology
		Revision and Preparation for Viva Mock Practical Exam	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS:BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		Revision and Preparation for Viva Mock Practical Exam	B.Sc. BIOCHEMISTRY Hons.) II Year, Semester IV	CBCS: BCH C-09 GENE ORGANIZATION REPLICATION AND REPAIR



Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
January	Theory:	Amino acids and their properties - hydrophobic, polar and charged. Multimeric proteins, Conjugated proteins and Metallo-proteins. Diversity of peptide and protein function and their applications. Solid phase peptide synthesis.	FBCH	Proteins (BCH C-3)
		<i>De novo</i> synthesis of purine and pyrimidine nucleotides, regulation and salvage pathways. Biosynthesis of deoxyribonucleotides and its regulation, conversion to triphosphates, biosynthesis of coenzyme nucleotides.	SBCH	BCH C-10 : METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		Concept of Metabolism No. of Hours: 8 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.	SBS	BS-C10: METABOLISM AND INTEGRATION
	Practicals:	1.Partial purification of an enzyme using bulk methods or chromatography 2.Assay to determine activity and specific activity of an enzyme 3.Progress curve for an enzyme	FBCH	Enzymes (BCH C-4)
		1. Estimation of serum urea. 2. Estimation of serum uric acid.	SBCH	BCH C-10 : METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		1.Verification of Chargaff’s rule by paper chromatography. 2. Ultraviolet absorption spectrum of DNA and RNA.	SBCH	BCH C-9 : GENE ORGANIZATION, REPLICATION AND REPAIR
Tutorials:				
February	Theory:	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, hydrophobic interaction/reverse phase chromatography, affinity chromatography, HPLC and FPLC. Determination of purity, molecular weight, extinction coefficient and sedimentation coefficient. IEF, SDS-PAGE and 2-D gel electrophoresis.	FBCH	Proteins (BCH C-3)

		Biosynthesis of creatine and creatinine, polyamines (putresine, spermine, spermidine), catecholamines (dopamine, epinephrine, norepinephrine) and neurotransmitters (serotonin, GABA). Digestion of nucleic acids, degradation of purine and pyrimidine nucleotides. Inhibitors of nucleotide metabolism. Disorders of purine and pyrimidine metabolism – Lesch-Nyhan syndrome, Gout, SCID, adenosine deaminase deficiency. PEM (Kwashiorkar and Marasmus), Inborn errors of metabolism- i) Protein-PKU, Alkaptonuria and Maple syrup and Gauchers. Protein catabolism - Transamination and deamination, Urea cycle, glucogenic and keogenic amino acids.	SBCH	BCH C-10 : METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
			SBS	BS-C10: METABOLISM AND INTEGRATION
	Practicals:	1. Effect of pH/temperature on enzyme activity 2. Determination of K_M and V_{max} of an enzyme using Lineweaver-Burk plot 1. Assay of serum transaminases – SGOT and SGPT. 2. Estimation of serum creatinine. 1. Determination of DNA and RNA concentration by A_{260nm}. 2. Determination of the melting temperature and GC content of DNA.	FBCH	Enzymes (BCH C-4)
			SBCH	BCH C-10 : METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
			SBCH	BCH C-9 : GENE ORGANIZATION, REPLICATION AND REPAIR
	Tutorials:			
	Assignments			
March	Theory:	Introduction to protein sequence and structure databases (UNIPROT, SWISS-PROT & PDB), Protein sequence file Format (FASTA) and Visualization softwares. Porphyrin biosynthesis, catabolism and disorders of porphyrin metabolism. Components, properties and function of electron transport system, chemiosmotic hypothesis, inhibitors and uncouplers, Shuttle systems	FBCH	Proteins (BCH C-3)
			SBCH	BCH C-10 : METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
			SBS	BS-C10: METABOLISM AND INTEGRATION
	Practicals:			
	Tutorials:			
	Test			
April	Theory:	Transport protein: Haemoglobin - Oxygen binding curves, influence of 2,3-BPG, CO_2 and H^+ , Hill plot,	FBCH	Proteins (BCH C-3)

		Cooperativity between subunits and models to explain the phenomena - concerted and sequential models. Haemoglobin disorders-sickle cell anemia, thalassemias. Defects in protein folding. Diseases associated with misfolding – Alzheimer's and Prion based. Integration of metabolic pathways (carbohydrate, lipid and amino acid metabolic pathways), tissue specific metabolism (brain, muscle, and liver). Role of microbes in metabolic tasks- alternate metabolic cycles. Carbon metabolism of intracellular bacterial pathogens, environmental cleansing, metabolic handling of xenobiotics and drug resistance,, photo and lithotrophic metabolic capabilities; Myporia	SBCH SBS	BCH C-10 : METABOLISM OF AMINO ACIDS AND NUCLEOTIDES BS-C10: METABOLISM AND INTEGRATION
	Practicals:	1. Calculation of inhibitory constant (K_i) for an enzyme 2. 2.Continuous assay of an enzyme 1. Isolation of chromosomal DNA from <i>E. coli</i> cells.		Enzymes (BCH C-4) BCH C-9 : GENE ORGANIZATION, REPLICATION AND REPAIR
	Tutorials:			



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Sarika Yadav

Department: BIOCHEMISTRY

Semester: II/IV/VI (2019-2020)

Month		Topics	Course	Paper Code/Name
JAN	Theory	Introduction to peptides and proteins. Organization of protein structure into primary, secondary, tertiary and quaternary structures. N-terminal and C-terminal amino acid analysis. Sequencing techniques - Edman degradation. Generation of overlap peptides using different enzymes and chemical reagents	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins
		Overview of amino acid metabolism, Metabolic fates of amino groups. Digestion and absorption of dietary proteins. Protein calorie malnutrition - Kwashiorkar and Marasmus. Nitrogen balance, transamination, role of pyridoxal phosphate, glucose-alanine cycle, Krebs's bicycle, urea cycle and inherited defects of urea cycle.	B.Sc. Biochemistry (H) II Yr, Sem. III	BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
		Practicals		
	Practical	Estimation of proteins using UV-absorbance and Biuret method.	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins
		Hematology: RBC and WBC counting; Clotting time, PCV, ESR	B.Sc. Biochemistry (H) II Yr, Sem IV	BCH C-8: HUMAN PHYSIOLOGY
		Estimation of ascorbic acid in fruits and vegetables, Separation of photosynthetic pigments by TLC	B. Sc (H) Biochemistry, III Yr, Sem VI	BCH DSE-7: PLANT BIOCHEMISTRY
FEB	Theory	Disulfide bonds and their location. . Solid phase peptide synthesis. Forces stabilizing the protein structure - covalent and non-covalent. Importance of primary structure in protein folding. The peptide bond, dihedral angles psi and phi, helices, sheets and turns, Ramachandran map.	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins
		Catabolic pathways of individual amino acids. Glucogenic and ketogenic amino acids. Metabolism of one carbon units. Disorders of amino acids metabolism, phenylketonuria, alkaptonuria, maple syrup urine disease, methylmalonic acidemia (MMA), homocystinuria and Hartnup's disease.	B.Sc. Biochemistry (H) II Yr, Sem. III	BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
	Practical:	Estimation of proteins using Lowry/Bradford method. Determination of isoelectric pH of casein. Ammonium sulphate fractionation of proteins	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins

		Estimation of haemoglobin, Separation of plasma proteins. Differential leucocyte count, Determination of total iron binding capacity.	B.Sc. Biochemistry (H) II Yr, Sem IV	CBCS C-8: Human Physiology
		Extraction and assay of Urease from Jack bean, Theory of Culture of plants (explants). Estimation of phenols in fruits and vegetables	B. Sc (H) Biochemistry, III Yr, Sem VI	BCH DSE-7: PLANT BIOCHEMISTRY
<u>MARCH</u>	Theory	Motifs and domains. α -keratin, silk fibroin, collagen. 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
		Nitrogen cycle, Overview of amino acid synthesis. Biosynthesis of non-essential amino acids and its regulation.	B.Sc. Biochemistry (H) II Yr, Sem. III	BCH C-10: METABOLISM OF AMINO ACIDS AND NUCLEOTIDES
	Practical	Molecular Visualization Softwares: Pymol and Rasmol for protein structures from PDB. Separation of proteins using anion-exchange chromatography (demonstration). SDS-PAGE analysis of proteins (demonstration).	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins
		Pulmonary function tests, spirometry and measurement of blood pressure, Separation of isoenzymes of LDH by electrophoresis. Histology of connective tissue, liver and/ brain permanent slides. Case studies (Renal clearance, GFR, ECG).	B. Sc (H) Biochemistry, II Yr, Sem IV	BCH C-8: Human Physiology
		Induction of hydrolytic enzymes proteinases /amylases/lipase during germination	B. Sc (H) Biochemistry, III Yr, Sem VI	BCH DSE-7: PLANT BIOCHEMISTRY
	<u>APRIL</u>	Theory	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
Integration of metabolic pathways (carbohydrate, lipid and amino acid metabolic pathways), tissue specific metabolism (brain, muscle, and liver).			B.Sc. Biochemistry (H) II Yr, Sem. III	BCH C-10: METABOLISM OF AMINO ACIDS AND
Practical		Revision of practicals, Mock Practical Examination	B.Sc. Biochemistry (H) I Yr, Sem II	BCH C-3: Proteins
		Revision of practicals, Mock Practical Examination	B. Sc (H) Biochemistry, II Yr, Sem IV	CBCS C-8: Human Physiology

		Revision of practicals, Mock Practical Examination	B. Sc (H) Biochemistry, III Yr, Sem VI	BCH DSE-7: PLANT BIOCHEMISTRY
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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	Features of enzyme catalysis, factors affecting the rate of chemical reactions, collision theory, activation energy and transition state theory. Catalysis, reaction rates and thermodynamics of reaction. Catalytic power and specificity of enzymes (concept of active site), Fischer's lock and key hypothesis, Koshland's induced fit hypothesis. Radio active materials: Types, precautions for handling, methods of measurements and applications. Autoradiography. 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.	B.Sc (H) Biochemistry Sem II PG Diploma Sem II PG Diploma Sem II	BCH – C4 - Enzymes PGD MB 201 – Biophysical Techniques - II PGD MB 202 – Recombinant DNA Technology - II
	Practicals	Preparation of Media and Sterilization Agarose gel electrophoresis Immunodiffusion – DID, SRID Immunoelectrophoresis – Counter, Rocket, Simple Ammonium Sulphate Fractionation Ion exchange Chromatography ELISA	BSc (H) Biological Sciences Sem IV BSc (H) Biological Sciences Sem VI PG Diploma Sem II	SEC – Recombinant DNA Technology BS C13 – Defence Mechanisms PGD MBL 206 – Immunology -II

FEBRUARY	Theory:	General features - proximity and orientation, strain and distortion, acid-base and covalent catalysis (chymotrypsin, lysozyme). Enzymes: Basic features of enzymes, catalysis, estimation of Vmax and Km using Lineweaver – Burke plot, enzyme inhibition, specific activity. Gene transfer to animal cells: chemical transfection, lipofection, electroporation, gene-gun, microinjection, transient and stable transformation, optimization of protein synthesis, use of reporter genes. DNA markers: VNTRs and DNA fingerprinting, SNPs, RFLPs.	B.Sc (H) Biochemistry Sem II PG Diploma Sem II PG Diploma Sem II	BCH – C4 - Enzymes PGD MB 201 – Biophysical Techniques - II PGD MB 202 – Recombinant DNA Technology - II
	Practicals :	Restriction digestion of plasmid DNA Restriction digestion of Genomic DNA Primer designing PCR Ammonium Sulphate Fractionation Ion exchange Chromatography & Dialysis Spleen cell isolation Enzyme Activity, specific activity, Progress curve, Optimum pH, Km, VMax and KI	BSc (H) Biological Sciences Sem IV BSc (H) Biological Sciences Sem VI PG Diploma Sem II	SEC – Recombinant DNA Technology BS C13 – Defence Mechanisms PGD MBL 204 – Biophysical techniques
MARCH	Theory	Metal activated enzymes and metalloenzymes, transition state analogues. Coenzymes in enzyme catalyzed reactions. Structure, vitamin precursors, types of reaction involved in: TPP, FAD, NAD, pyridoxal phosphate,	B.Sc (H) Biochemistry Sem II	BCH – C4 - Enzymes
		Genomics: Genome and genes, gene organization, prokaryotic and eukaryotic protein structure, control switches, ORF, promoters, ESTs, genome analyses, gene prediction, statistical models, mathematical models, sequence alignment, comparative genomics, genomics in preservation of endangered species, SNPs.	PG Diploma Sem II	PGD MB 201 – Biophysical Techniques - II

		DNA transformation in yeast: methods of gene transfer to yeast ,YIp, YEp, YCp, YRp, shuttle vectors), optimization of protein expression. RNAi,	PG Diploma Sem II	PGD MB 202 – Recombinant DNA Technology - II
APRIL	Practicals	Competent cells preparation Transformation Blue white screening Plasmid Isolation Characterization of diseases symptoms and identification of pathogenic organisms (at least one each from viral, fungal, pest and nematodes injection). Survey of structural plants defences: viz. cuticle, wax, lignin, bark, thorns, prickles, trichomes, armour in different plants species including thigmonasty, camouflage, mimicry. Survey: Quantitative and qualitative secondary metabolites in plants: alkaloids, glycosides, glycosinolates, terpenoids, phenolics, gammosis etc. in healthy and diseased plant/plant organs. Spleen Cell Isolation Immunoblotting Coenzymes contd - biotin,	BSc (H) Biological Sciences Sem IV BSc (H) Biological Sciences Sem VI PG Diploma Sem II	SEC – Recombinant DNA Technology BS C13 – Defence Mechanisms PGD MBL 206 – Immunology –II BCH – C4 - Enzymes

	Theory	coenzyme A, tetrahydrofolate and lipoic acid. Revision of syllabus, class tests and assignments. Proteomics: atomic view of proteins, the hierarchical nature of protein architecture, protein folding, protein structure prediction, homology models, threading/fold recognition, Ab-initio models, protein-protein interactions, proteins as drug targets, phylogenetic analyses	B.Sc (H) Biochemistry Sem II PG Diploma Sem II PG Diploma Sem II	PGD MB 201 – Biophysical Techniques - II PGD MB 202 – Recombinant DNA Technology - II
	Practicals	Mock Evaluation and Repeat experiments Mock Evaluation and Repeat experiments Mock Evaluation and Repeat experiments	BSc (H) Biological Sciences Sem IV BSc (H) Biological Sciences Sem VI PG Diploma Sem II	SEC – Recombinant DNA Technology BS C13 – Defence Mechanisms PGD MBL 206 – Immunology –II



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Kalyani Krishna
Semester : II/IV/VI 2019-20

Department: Botany

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, C ₄ 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 enzyme 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:	-----		
April	Assignment :	Given to all students for respective papers		
	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 - To demonstrate bolting - To demonstrate effect of auxins on rooting To demonstrate suction due to transpiration	B.Sc. (H) Biological Sciences Semester VI B.Sc. (P) Life Sciences	Analytical techniques in Plant 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 • 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. (H) Biological Sciences Semester VI B.Sc. (P) Life Sciences	Plant metabolism Analytical techniques in Plant Sciences. Plant Physiology and Metabolism
	Tutorials:	-----		



Department: Botany

Semester :

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.	B.Sc. Botany (Sem: IV)	CC-10: Plant Systematics
		Ex.2: Study of vegetative and floral characters for family-Brassicaceae (description).	B.Sc.(P)-Life Science Sem.IV(B-I)	LSCC-1/Plant Physiology & Metabolism
		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.			
	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: Micropropagation technique and isolation of protoplast methods, in vitro sterilization 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); Genetically 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
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Teaching plan

Name: Dr. Pooja Gokhale Sinha

Department: Botany

Week	Course	Subject	Topic
January	B.Sc. (H) Botany Sem IV	Ecology	- Community Dynamics - Introduction to community - Description of community characters - Analytical and synthetic characters
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	- Prevalence of microbes in air, water and soil - Types and functions of Fermenters - Functions of fermenters in industrial microbiology
February	B.Sc. (H) Botany Sem IV	Ecology	- Laws of ecology, - Law of minimum - Law of tolerance
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	- Methods of Waste water treatment - Mechanisms to isolate microbes from air water and soil
March	B.Sc. (H) Botany Sem IV	Ecology	- Population ecology: Introduction - Types of population pyramids - Population interactions - Survivorship curves
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	- Role of microbes in industrial purposes - Microbes in enzymes, medicines etc - Processes in industrial microbiology

April			
	B.Sc. (H) Botany Sem IV	Ecology	- Concept of climax in succession - Theories of succession in a community
	B.Sc. (H) Botany Sem VI	Industrial and Environmental Microbiology	- Environmental microbiology: Microbes in Air, soil and water - Recapitulation



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

Name of the Faculty: Neeti Mehla

Department: Botany

Semester: II/IV/VI

Academic year – 2019-2020

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	Economic Botany and Plant Biotechnology
		- 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 - Determination of osmotic potential of plant cell sap by plasmolytic method. - To study the effect of the light intensity on transpiration by excised twig. - To study the effect of the light intensity on transpiration by excised twig	Bsc. Botany (H) IV Sem BSc.Life Sciences IV Sem	Molecular Biology Plant Physiology and Metabolism
	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 ; • 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 • Mineral Nutrition- Essential elements, macro- and micronutrients, • criteria of essentiality of elements, methods of studying mineral requirement (Hydroponics, Aeroponics)	Bsc. Botany (H) IV Sem BSc.Life Sciences IV Sem	Molecular Biology 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 • Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte. • To Study Hill's reaction. • To study the activity of catalase enzyme	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem	Economic Botany and Plant Biotechnology Molecular Biology
	Tutorials:			
March	Theory:	• Micropropagation • Haploid production through androgenesis and Gynogenesis • 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	BSc. Life Sciences VI Sem Bsc. Botany (H) IV Sem	Economic Botany and Plant Biotechnology Molecular Biology

		• Role of essential elements • Transport of ions across membrane • Active and passive transport, carriers, channels and pumps. • Composition of phloem sap, • Girdling experiments, Pressure Flow Model	BSc.Life Sciences IV Sem	Plant Physiology and Metabolism
MARCH	Practicals:	• Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation • Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozymes and Alternative splicing • To study the effect of pH and enzyme concentration on the activity of Enzyme Catalase. • To study the effect of light intensity on O₂ evolution in photosynthesis. • To study the effect of bicarbonate concentration on O₂ evolution in photosynthesis.	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
	Tutorials:			
	<u>Tests</u>			
	Theor y:	• Introduction to Biotechnology • Brief account of embryo & endosperm culture with their applications. • Revision of concepts through online e-resources • Translation in 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. • Munch's 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
April				

		Phloem loading and unloading		
APRIL	Practicals:	- Study of molecular techniques: PCR, Blotting techniques, AGE and PAGE - Understanding the mechanism of RNAi by photographs. - Mock test - Comparison of the rate of respiration in any two parts of a plant. - To demonstrate the effect of Bolting - To study the phenomenon of seed germination (effect of light and darkness) - To study the effect of Auxins.	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
May	Tutorials:			
	Theory:	- Revision of concepts through online e-resources - Fidelity of translation; Inhibitors of protein synthesis; Post-translational modifications of proteins. - Plant Growth Regulators- Discovery, physiological roles of auxins, gibberellins, cytokinins and ethylene. - 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
MAY	Practicals:	Mock Practical exam and Revision Mock Practical exam and Revision Demonstration of following setups 1.Suction due to transpiration 2.Separation of amino acids by paper chromatography	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
	Tutorials:			



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Yogendra Kumar Gautam

Department: Botany

Semester: II/IV/VI

Month		Topics	Course	Paper
JANUARY	Theory	Taxonomic evidence from palynology, cytology, phytochemistry and molecular data.	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
		Bioreactors/Fermenters and fermentation processes,	B.Sc.(H) Botany (Sem: VI)	DSE-III/ Industrial & Environmental Microbiology
		Taxonomic evidences from palynology, cytology, phytochemistry and molecular data.	B.Sc. Life Sc. (Sem: II) Sec.A&B	LSCC3/ Plant Ecology and Taxonomy
		Basidiomycota- General characteristics.	B.Sc. (H) Botany (Sem: II)	BHCC3/Mycology and Phytopathology
	Practicals:	Introduction to Taxonomic Terminology (Vegetative characters) Study of vegetative and floral characters of the families: Brassicaceae - <i>Brassica</i> , <i>Alyssum</i> / <i>Iberis</i>	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
		Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter.	B.Sc. Life Sc. (Sem: II)	LSCC3/ Plant Ecology and Taxonomy
		Introduction to Taxonomic Terminology (Vegetative characters) Study of vegetative and floral characters of the families: Brassicaceae - <i>Brassica</i> , <i>Alyssum</i> / <i>Iberis</i> Asteraceae - <i>Sonchus/Launaea</i> , <i>Vernonia/Ageratum</i> , <i>Eclipta/Tridax</i>		
		1. Calculation of stomatal index of leaf of given plant material mesophyte and xerophyte. 2. Calculation of stomatal frequency of leaf of given plant material mesophyte and	B.Sc. Life Sc. (Sem: IV)	CC-4/Plant Physio.& Metabolism
	Tutorials	-----		
	Theory:	Biometrics, numerical taxonomy and cladistics; Characters; Variations; OTUs,	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics

	Solid-state and liquid-state (stationary and submerged) fermentations; Batch and continuous fermentations.	B.Sc.(H) Botany (Sem: VI)	DSE-III/ Industrial & Environmental Microbiology
	Basidiomycota- Ecology; Life cycle and Classification. <i>Puccinia</i> - black stem rust on wheat (Physiological Specialization).	B.Sc.(H) Botany (Sem: II)	BHCC3/Mycology and Phytopathology
	Phytogeography- Principle biogeographical zones; Endemism (definition and types).	B.Sc. Life Sc. (Sem:II) Sec.-A	LSCC3/ Plant Ecology and Taxonomy
	Types of classification-artificial, natural and phylogenetic.Bentham and Hooker (up to series).	B.Sc. Life Sc. (Sem:II) Sec.-B	
	Practicals: Study of vegetative and floral characters of the families: <i>Asteraceae – Sonchus, Vernonia,, Tridax</i> <i>Solanaceae - Solanum nigrum, Withania</i> <i>Lamiaceae – Salvia, Ocimum</i> <i>Euphorbiaceae – Euphorbia milii,</i> <i>Liliaceae - Allium</i>	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
	Determination of pH, and analysis of two soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency by rapid field test. Study of vegetative and floral characters of the families: <i>Solanaceae - Solanum nigrum/Withania</i> <i>Lamiaceae - Salvia/Ocimum</i> Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method. (species to be listed) Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law	B.Sc. Life Sc. (Sem:II)	LSCC3/ Plant Ecology and Taxonomy
	1. Study the effect of light intensity on the rate of photosynthesis 2. Study the effect of CO ₂ concentration on the rate of photosynthesis 3. Determination of osmotic potential of plant cell sap by plasmolytic method. 4. Study the effect of environmental factor on the rate of transpiration using photometer.	B.Sc. Life Sc. (Sem: IV)	CC-4/Plant Physio.& Metabolism
	Tutorials: -----		

	<u>Assignment :</u>	Assignment Topics allotted to students from whole the syllabus. Assignments collected	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
MARCH	Theory:	character weighting and coding; cluster analysis; Phenograms, cladograms (definitions and differences) Methods of illustrating evolutionary relationship (phylogenetic tree, cladogram).	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
		Components of a typical bioreactor, Types of bioreactors-laboratory, pilotscale and production fermenters. Constantly stirred tank fermenter, tower fermenter, fixed bed and fluidized bed bioreactors and air-lift fermenter.	B.Sc.(H) Botany (Sem: VI)	DSE-III/ Industrial & Environmental Microbiology
		<i>Ustilago</i> -loose and covered smut, symptoms only,	B.Sc.(H) Botany (Sem: II)	BHCC3/Mycology and Phytopathology
		Functions of Herbarium, important herbaria and botanical gardens of the world and India.	B.Sc. Life Sc. (Sem:II) Sec.-A	LSCC3/ Plant Ecology and Taxonomy
		Biometrics, numerical taxonomy and cladistics.	B.Sc. Life Sc. (Sem:II) Sec.-B	
	Practicals:	Study of vegetative and floral characters of the families: Umbelliferae – <i>Coriandrum</i> Poaceae - <i>Triticum</i>	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
		Study of morphological adaptations of hydrophytes and xerophytes (four each). Study of biotic interactions of the following: Stem parasite (<i>Cuscuta</i>), Root parasite (<i>Orobancha</i>), Epiphytes, Predation (Insectivorous plants)	B.Sc. Life Sc. (Sem:II)	LSCC3/ Plant Ecology and Taxonomy
		Comparison of the rate of respiration in any two parts of a plant.	B.Sc. Life Sc. (Sem:IV)	CC-4/Plant Physio.& Metabolism
	<u>Tutorials:</u>	-----		
	<u>Test</u>	Scheduled the date after mid sem. break		
APRIL	Theory: (online pdf content)	Phylogeny of Angiosperms- Terms and concepts. Origin & evolution of angiosperms; co-evolution of angiosperms and animals. Mock test (online)	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
		Microorganisms involved, media, fermentation conditions, downstream processing and uses	B.Sc.(H) Botany (Sem: VI)	DSE-III/ Industrial & Environmental Microbiology
		<i>Agaricus</i> ; Mushroom Cultivation. Bioluminescence, Fairy Rings.	B.Sc.(H) Botany (Sem: II)	BHCC3/Mycology and Phytopathology
		Documentation: Flora, Keys: single access and multi-access.	B.Sc. Life Sc. (Sem: II) Sec.-A	LSCC3/ Plant Ecology and Taxonomy
		Engler and Prantl (up to series). Characters; variations; OTUs, character weighting and coding; cluster analysis; phenograms, cladograms.	B.Sc. Life Sc. (Sem: II) Sec-B	

Practicals:	Mock test(online)	B.Sc.(H) Botany (Sem: IV)	CC-X/Plant Systematics
		B.Sc. Life Sc. (Sem:II)	LSCC3/ Plant Ecology and Taxonomy
	Demonstration of Physiology experiment set-up.(online)	B.Sc. Life Sc. (Sem:IV)	CC-4/Plant Physio.& Metabolism
Tutorials:	-----		



**SEMESTER WISE TEACHING
PLAN (Jan 2020)
SRI VENKATESWARA COLLEGE**

Name of the Faculty: Tabassum Afshan

Department: Botany

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	1. Phytopathology: terms and concepts, General symptoms, Geographical distribution of diseases, Host pathogen relationships; disease cycle and environmental relation; Methods of control of plant diseases, and role of quarantine. Bacterial diseases – Citrus canker and angular leaf spot disease of Cotton. Viral diseases – Tobacco Mosaic viruses, vein clearing relationships	B.Sc. Botany (Hons.)	CC-III/ Mycology and Phytopathology
		2. 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 , Saptadhatu and Tridoshas in relation to health and disease.	B.Sc. Botany (Hons.)	SEC/Medicinal Botany
		3. Therapeutic and pharmaceutical uses of important plants used in Ayurveda system of medicine 4. Concept of Rasayana drugs 5. Plant communities: Characters; Ecotone and edge effect; Succession; Processes and types. 6. Introduction to plant taxonomy Identification, Classification, Nomenclature.	B.Sc. Life Sciences	CC-II/Plant Ecology and Taxonomy
	Practicals	1. Introduction to the world of fungi (Unicellular, coenocytic/septate mycelium, ascocarps & basidiocarps).	B.Sc. Botany (Hons.)	CC-III/ Mycology and Phytopathology
		2. Rhizopus: study of asexual stage from temporary mounts and sexual structures through permanent slides. 3. Aspergillus and Penicillium: study of asexual stage from temporary mounts. Study of Sexual stage from permanent slides/photographs.		
		4. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer, hygrometer, rain gauge and lux meter. 5. Determination of pH, and analysis of two soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency by rapid field test.	B.Sc. Life Science	CC-II/Plant Ecology and Taxonomy
		6. Identification and medicinal value of locally available medicinal plants in the field.	B.Sc. Botany (Hons.)	SEC/Medicinal Botany

	Tutorials			
FEBRUARY	Theory:	1.Applied Mycology : Role of fungi in biotechnology, Application of fungi in food industry (Flavour & texture, Fermentation, Baking, Organic acids, Enzymes, Mycoproteins) 2.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.Identification, Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access 5.Taxonomic hierarchy, Ranks, categories and taxonomic groups	B.Sc. Botany (Hons.) B.Sc. Botany (Hons.) B.Sc. Life Sciences	CC-III/Mycology and Phytopathology SEC/Medicinal Botany CC-II/Plant ecology and Taxonomy

Practicals:	1. Peziza: sectioning through ascocarp. 2. Alternaria: Specimens/photographs and temporary mounts. 3. Puccinia: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; sections/ mounts of spores on wheat and permanent slides of both the hosts.	B.Sc. Botany (Hons.)	CC-III/ Mycology and Phytopathology
	4. (a) Study of morphological adaptations of hydrophytes and xerophytes (four each). 5. (b) Study of biotic interactions of the following: Stem parasite (Cuscuta), Root parasite (Orobanchae), Epiphytes, Predation (Insectivorous plants) 6. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method. (species to be listed) 7. Isolation of bioactive compounds in the lab and phytochemical analysis of the crude extract of various parts of medicinal plants 8. Study of ingredients and medicinal uses of common polyherbal formulations used in the traditional system of medicine	B.Sc. Life Science	CC-II/ Plant Ecology and Taxonomy
		B.Sc. Botany (Hons.)	SEC/Medicinal Botany

	Tutorials:			
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	<u>Assignment:</u>	Entire Syllabus		
MARCH	Theory:	1.Secondary metabolites ; Mycotoxins; Biological control (Mycofungicides, Mycoherbicides, Mycoinsecticides, Myconematicides); Medical mycology. 2.Plants used for the treatment of hepatic disorders, cardiac diseases, infertility, diabetes, blood pressure, cancer and skin diseases 1.Botanical nomenclature Principles and rules (ICN); ranks and names; binominal system, typification, author citation, valid publication, rejection of names, principle of priority and its limitations.	B.Sc. Botany (Hons.) B.Sc. botany (Hons.) B.Sc. Life Science	CC-III/ Mycology and Phytopathology SEC/Medicinal Botany CC-II/Plant ecology and Taxonomy
	Practicals:	1. Agaricus: Specimens of button stage and full grown mushroom; sectioning of gills of Agaricus, fairy rings and bioluminescent mushrooms to be shown. 2. Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law 3.E-presentations : traditional system of medicine, contribution of medicinal plants to alternative and modern medicine, conservation strategies of medicinal plants	B.Sc. Botany (Hons.) B.Sc. Life Science B.Sc. Botany (Hons.)	CC-III/ Mycology and Phytopathology CC-II/ Plant Ecology and Taxonomy SEC/Medicinal Botany
	Tutorials:			
	<u>Test</u>	Entire Syllabus		



SEMESTER WISE TEACHING PLAN (2019-2020)
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
		History, scope and importance of medicinal plants, indigenous medicinal sciences, definition and scope. History of Ayurveda, siddha and Unani system of medicine	B.Sc. (H) Botany and B.Sc. Life Science	SEC-Medicinal Botany
	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
		Collection, study of morphology and identification of medicinal plants from the field/ botanical (10 plants) garden	B.Sc. (H) Botany	SEC-Medicinal Botany
	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
		Panchmahabhutas, saptdhatu and tridosha concept of Ayurveda, treatment and therapies given in different diseases in systems of medicine, polyherbal formulations, Role of Ethnobotany in modern medicine with special example – <i>Rauvolfia serpentine</i> , <i>Trichopus zeylanicus</i> , <i>Artemesia</i> , <i>Withania</i>	B.Sc. (H) Botany and B.Sc. Life Science	SEC-Medicinal Botany
	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
		Preparation and labelling of Herbarium specimens (10 plants), Extraction of crude extracts from various ethnobotanically related plant material, field visit and project work	B.Sc. (H) Botany	SEC-Medicinal Botany
	Tutorials:			

	<u>Assignment:</u>	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 proteins and nucleic acids	B.Sc. (H) Biological Science	Analytical Techniques in Plant Sciences
		Role of Ethnobotany in modern medicine : Medico Ethnobotanical sources in India, significance of the following plants in Ethnobotanical practices(along with their habitat and morphology)a) <i>Azadirachta indica</i> , b) <i>Ocimum sanctum</i> , c) <i>Vitex negundo</i> , d) <i>Gloriosa superba</i> , Methodology of Ethnobotanical studies : a).Field work b).Herbarium,	B.Sc. (H) Botany and B.Sc. Life Science	SEC-Medicinal Botany
	Practicals:	Micropropagation technique and isolation of protoplast methods, in vitro sterilization methods	B.Sc. (H) Botany	Plant Biotechnology
		Isolation of chloroplast by differential centrifugation, study of different microscopic techniques, FISH and fluorescence microscopy		
		Study of different chromatographic techniques (GFC and Ion exchange). To perform Agarose gel electrophoresis	B.Sc. (H) Biological Science	Analytical Techniques in Plant Sciences
		Study of different systems of medicine – Ayurveda, siddha and unani and their formulations, survey based exercise to collect data on the importance of usage of Indian medicine system	B.Sc. (H) Botany	SEC-Medicinal Botany
	Tutorials:			
	<u>Test</u>	Internal theory test was conducted as per the date sheet		

APRIL	Theory :	Online teaching due to lockdown (Teaching plan was made for 4 weeks virtual teaching)		
	Practicals:			
	Practicals Test			

MAY	Theory:			
	Practicals:			
	Tutorials:			



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Yadav
Semester : II/IV/VI 2019-20

Department: Botany

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	B.Sc. (H) Botany Semester VI	Plant metabolism
		To determine osmotic potential of plant cell sap by plasmolytic method	B.Sc. (P) Life Sciences Semester IV	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 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. (H) Botany Semester VI B.Sc. (P) Life Sciences Semester IV	Plant metabolism 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 enzyme 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:	-----		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2019-20)

Name of the Faculty: Dr. S. Venkata Kumar

Department: Commerce

Semester: VI

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY 2020	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. Thinking conceptually about politics: liberty, equality, justice, rights and recognition, the idea of a good society, domain of politics and ethics, democracy and welfare state, market and globalisation; consequentialism, deontologism, teleological reasoning, concept of business, ethics, corporate code of ethics, environment, accountability, responsibility, leadership, diversity, discrimination	1. B.Com. (Hons) - VI 2. B.Com. (Hons) - VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business
	Tutorials	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. Thinking conceptually about politics: liberty, equality, justice, rights and recognition, the idea of a good society, domain of politics and ethics, democracy and welfare state, market and globalisation	1. B.Com. (Hons) - VI 2. B.Com. (Hons) - VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics, and Social Responsibility of Business
Month	Type of Class	Topics	Course	Paper Code/Name
FEBURARY 2020	Theory	1. International business environment: National and foreign environments and their components –	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business

		economic, cultural, and political-legal environments; Theories of international trade – an overview; Global trading environment – recent trends in world trade in goods and services; trends in India's foreign trade 2. Principles of business ethics, characteristics of ethical organisation, theories of business ethics, globalization and business ethics, stakeholder's protection, corporate governance and business ethics; conceptual framework of corporate governance, insider trading, rating agencies, whistle blowing, corporate governance reforms, initiatives in India including clause 49.		2. CH 6.2: Governance, Ethics, and Social Responsibility of Business
	Tutorials	1. International business environment: National and foreign environments and their components – economic, cultural, and political-legal environments; Theories of international trade – an overview; Global trading environment – recent trends in world trade in goods and services; trends in India's foreign trade 2. Principles of business ethics, characteristics of ethical organisation, theories of business ethics, globalization and business ethics, stakeholder's protection, corporate governance and business ethics; conceptual framework of corporate governance, insider trading, rating agencies, whistle blowing, corporate governance reforms, initiatives in India including clause 49.	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business
Month	Type of Class	Topics	Course	Paper Code/Name
MARCH 2020	Theory	1. Commercial policy instruments – tariff and non-tariff measures, balance of payment account and its components; An overview of other organizations – UNCTAD, World Bank and IMF, Commodity and other trading agreements; regional economic co-operation, forms of regional groupings; integration efforts among countries in Europe, North America and Asia 2. Junk Bond scam (USA), Bank of credit and commerce international (UK), Maxwell	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business

		communication corporation and Mirror Group Newspapers (UK), Enron (USA), WorldCom (USA), Tyco (USA), Anderson Worldwide (USA), Kirch Media (Germany), Vivendi (France), Paramalat (Italy) and Satyam Computer Services Ltd. (India), Common Governance Problems noticed in various corporate failures, is corporate governance always the cause for corporate failures?; Codes and standards on corporate governance (Unit VII)		
	Tutorials	1. Topics on unit- II 2. Topics on unit – VI & VII	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business
	Assignment	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments.	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business
	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. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business
Month	Type of Class	Topics	Course	Paper Code/Name
APRIL 2020	Theory	1. International Financial environment: International financial system and institutions; foreign investment in Indian perspective. 2. Corporate social responsibility (CSR) – Unit-VIII	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business

	Tutorials	1. International Financial environment: International financial system and institutions; foreign investment in Indian perspective. 2. Corporate social responsibility (CSR) – Unit-VIII	1. B.Com. (Hons) - VI 2. B.Com. (Hons)- VI	1. CH 6.1: International Business 2. CH 6.2: Governance, Ethics and Social Responsibility of Business



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
(2019-20) (Even Semester)

Name of the Faculty: Ms. Sunita Chhabra

Department: Commerce

Semester: IV/VI

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY 2020	Theory	1. Meaning, elements, determinants and importance of entrepreneurship and creative behaviour. Entrepreneurship and creative response to the society's problems at work, dimensions of entrepreneurship; entrepreneurship, technopreneurship, cultural entrepreneurship, international entrepreneurship and social entrepreneurship. Types of business entities- MSMEs, the contemporary role models in Indian business, conflict in family business and its resolution etc. 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)- II 2. B.Com (P)- III	1. BCH 4.5 (a) SEC: Entrepreneurship 2. BC 6.3: Personal Selling and Salesmanship
	Tutorials	1. Unit-1 2. Unit-1	1. B.Com (H)- VI (A+B) 2. B.Com (H)- VI (A+B)	1. BCH 6.4 : International Business 2. BC 6.2: Consumer Affairs and Customer Care
Month	Type of Class	Topics	Course	Paper Code/Name
FEBURARY 2020	Theory	1. Public and private system of stimulation, support and sustainability of entrepreneurship, requirement, availability and access to finance, marketing assistance, technology and industrial accommodation, role of industries associations and	1. B.Com (H)- II 2. B.Com (P)- III	1. BCH 4.5 (a) SEC: Entrepreneurship 2. BC 6.3: Personal Selling and Salesmanship

		self-help groups, the concept, role and functions of business incubators, angel investors, venture capital and private equity fund. 2. Theories of selling: traditional and modern, AIDAS Model of selling, problem solving approach, right set of circumstances theory and modern sales approaches.		
	Tutorials	1. Unit-II 2. Unit-II	1. B.Com (H)- VI (A+B) 2. B.Com (H)- VI (A+B)	1. BCH 6.4 : International Business 2. BC 6.2: Consumer Affairs and Customer Care
Month	Type of Class	Topics	Course	Paper Code/Name
MARCH 2020	Theory	1. Sources of business ideas and tests of feasibility. Significance of writing the business plan/project proposal, contents of business plan/project proposal, designing business processes, location, layout, operation, planning and control, preparation of project report, project submission, presentation and appraisal thereof by external agencies. 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.	1. B.Com (H)- II 2. B.Com (P)- III	1. BCH 4.5 (a) SEC: Entrepreneurship 2. BC 6.3: Personal Selling and Salesmanship
	Tutorials	1. Unit-III&IV 2. Unit-III&IV	1. B.Com (H)- VI (A+B) 2. B.Com (H)- VI (A+B)	1. BCH 6.4 : International Business 2. BC 6.2: Consumer Affairs and Customer Care
	Assignment	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments.	1. B.Com (H)- II 2. B.Com (P)- III	1. BCH 4.5 (a) SEC: Entrepreneurship 2. BC 6.3: 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)- II 2. B.Com (P)- III	1. BCH 4.5 (a) SEC: Entrepreneurship 2. BC 6.3: Personal Selling and Salesmanship
Month	Type of Class	Topics	Course	Paper Code/Name
APRIL 2020	Theory	1. Mobilizing resources for start-up. Accommodation and utilities. Preliminary contacts with the vendors, suppliers, bankers, principal customers, contract management: basic start-up problems. 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)- II 2. B.Com (P)- III	1. BCH 4.5 (a) SEC: Entrepreneurship 2. BC 6.3: Personal Selling and Salesmanship
	Tutorials	1. Unit-V 2. Unit-V	1. B.Com (H)- VI (A+B) 2. B.Com (H)- VI (A+B)	1. BCH 6.4 : International Business 2. BC 6.2: Consumer Affairs and Customer Care



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 Sem VI and 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 & B.Com 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	B.Com Sem VI & B.Com 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.	1) BCom H Sem VI & B.Com Sem VI	DSE: Fundamentals of Investment
	<u>Assignment:</u>	Assignment & presentation on any topic selected by the student from the syllabus	B.Com Sem VI & 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	B.Com Sem VI & 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	1) BCom H Sem VI & B.Com Sem VI	DSE: Fundamentals of Investment
	<u>Test</u>	Fixed Income Securities ; Approaches to Equity Analysis; The Investment Environment	B.Com Sem VI & 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.	B.Com Sem VI & BCom H Sem VI	DSE: Fundamentals of Investment
	Tutorials:	1) Presentation, and Discussion on MFs, Derivatives and Investor Protection.	1) BCom H Sem VI & BCom Sem VI	DSE: Fundamentals of Investment



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
EVEN SEM 2019-20

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. 2. Unit I: Univariate Analysis: Measures of Central Tendency including A.M., G.M., H.M., Median, Partition values and Mode and Measures of Variation including Range, Q.D. and M.D. Measures of Variation continues including variance and S.D.	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics
	Practicals	Introduction to excel and Mathematics of Finance	B.Com. (Hons) – IV B	BCH 4.2 B.Mathematics
	Tutorials	1. Basics and significance of Management Accounting 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 will be discussed related to following topics: AM, GM, HM, Median and Mode	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics

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. 2. Unit II: Bivariate Analysis: Simple Linear Correlation Analysis including meaning, Karl Pearsons and Spearman's correlation and Simple Linear Regression Analysis: Regression equations and estimation and Relationship between correlation and regression.	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics
	Practicals	Excel projects of Mathematics of finance-FV-annuity & Lump sum, PV-annuity & Lump sum Excel project: Graphical solutions of LPP Problems on Mathematics of Finance	B.Com. (Hons) – IV B	BCH 4.2 B.Mathematics
	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 following topics: SD, Variance, Correlation, Regression	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics

	Assignment	1. One home assignment will be given from the topic: Absorption and variable Costing and CVP analysis. 2. Assignment on: Univariate Analysis	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics
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 2. Unit III: Time based data: Index Numbers including construction of Index Numbers-Simple and Weighted, Tests of adequacy and Construction of consumer price indices.	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics
	Practicals	Excel Projects :LLP graphical solution and simplex using ‘solver-in’ in excel Problems on Mathematics of Finance	B.Com. (Hons) – IV B	BCH 4.2 B.Mathematics
	Tutorials	Practical questions and Presentation will be taken from the following topics: 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 index numbers	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics
	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. Univariate Analysis and Bivariate Analysis	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics

		Practical exam in B.Mathematics		
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 III: Time Series Analysis including meaning, components and trend analysis: moving average and least squares method.	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics
	Practicals	Problems on Mathematics of Finance	1. B.Com. (Hons) – IV B	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. Miscellaneous questions will be discussed from examination point of view. 2. Practical problems will be taken from time series analysis	1. B.Com. VI 2. B.Com. II	1. BC 6.1 Management Accounting 2. BC 2.3 Business Mathematics and Statistics



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sindhumani Bag

Department: Commerce

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
January-2020	Theory	1. Introduction, meaning & features, Administration of company laws, Kinds of companies. 2. Prospectus 3. Nature meaning, essentials and kinds of contract, Offer & Acceptance, consideration, Capacity of Parties, Free consent, Legality of object and consideration, Void agreement and contingent contract. 4. Limited Liability Partnership Act-2008: Introduction to LLP	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3.B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BCH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
	Tutorials /Practical:	1. Case laws presented by the Students 2. Case laws presented by the Students 3. Case laws presented by the Students 4. Case laws presented by the Students	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3.B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws

February-2020	Theory:	1. Formation of company, Memorandu, Association & Articles of Association. 2. Prospectus. 3. Discharge of contract, Quasi contract, Remedies for Breach of contract Indemnity and Guarantee, Contract of Bailment and Pledge, Contract of Agency 4. LLP Act-2008: Formation and Incorporation, Partners and their relations	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
	Tutorials/Practical:	1. Case laws presented by the Students 2. Case laws presented by the Students 3. Case laws presented by the Students 4. Case laws presented by the Students	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
	<u>Assignment</u>	Assignment questions Given to the students and collected Assignments.	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
March-2020	Theory:	1. Prospectus, Share and share capital, Members and Shareholders, Director and Key Managerial personnel, Shareholders Meeting, 2. Prospectus 3. Sales of Goods Act-1930: Nature and formation of contract of sale, Conditions and warranty, Transfer of Property, performance of contract of sale, Unpaid seller and his Rights. 4. Financial disclosure and Taxation, conversion to LLP,	B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws

	Tutorials/Practical:	1. Case laws presented by the Students 2. Case laws presented by the Students 3. Case laws presented by the Students 4. Case laws presented by the Students	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
	<u>Test</u>	Time schedule decided for conduct of Internal exam on 3 rd week of March.	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
APRIL-2020	Theory:	1. Accounts and Audit, Dividend provisions, Winding up of Companies, The Depository System. 2. The Depository System. 3. Limited Liability Partnership Act-2008: Introduction to LLP, Formation and Incorporation of LLP, Partner and their relations in LLP, Financial Disclosure and Taxation of LLP, Conversion to LLP, Winding up and Dissolution of LLP, Information Technology Act-2000: Introduction to IT Act, Digital Signature, Electronic governance, Attribution, Acknowledgement and dispatch of Electronic records, Regulation and certifying Authorities, Cyber contraventions, Adjudication, Appellate Tribunal and Offences. 4. Winding up and Dissolution of LLP	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws
	Tutorials/Practical:	1. Case laws presented by the Students 2. Case laws presented by the Students 3. Case laws presented by the Students 4. Case laws presented by the Students	1. B.Com (H)-II sem Sec-B 2. B.Com(H)-II sem,, SEC-A 3. B.Com (P)-II Sem, Sec-B 4. B.Com(P)-II sem, sec-A	1. BH 2.3: Corporate Laws 2. BCH 2.3: Corporate Laws 3. BC 2.2 Business Laws 4. BC 2.2: Business Laws



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
2019-20 (Even-Semester)

Name of the Faculty: Dr. Vinod Kumar

Department: Commerce

Course: B.Com (H)/B.Com

Semester: IV/VI

Month	Type of Class	Topics	Course	Paper Code/Name
JANUARY	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; International business environment: National and foreign environments and their components – economic, cultural, and political-legal environments; Theories of international trade – an overview; WTO –its objectives, principles, Organization structure and functioning; UNCTAD, World Bank, and IMF 2. Objectives of Project Planning: Introduction, objectives and process of project planning, monitoring and control of investment projects (this includes checking the planned activity), relevance of social cost benefit analysis (objectives and significance of social cost benefit analysis, identification of investment opportunities) includes sources of identification of investment opportunities, pre-feasibility studies (project life cycle).	1. B.Com. (Hons) - VI 2. B.Com - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management
	Practicals	1. Word: Working with word document, Inserting,	1. B.Com. (Hons.) - IV	1. BCH 4.3: Computer

		filling and formatting a table, Mail Merge including linking with Access Database, Creating Macros – sending E-mail from word Import/Export of files; converting word document to web document, PDF files; Hyperlinks; OLE security features in MS-Word – protection of documents- password for documents – checking for viruses in macros, referencing, creating bibliography, manage sources and citations, review documents.		Applications in Business
	Tutorials	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. Objectives of Project Planning: Introduction, objectives and process of project planning, monitoring and control of investment projects (this includes checking the planned activity), relevance of social cost benefit analysis (objectives and significance of social cost benefit analysis, identification of investment opportunities) includes sources of identification of investment opportunities, pre-feasibility studies (project life cycle).	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management
Month	Type of Class	Topics	Course	Paper Code/Name
FEBURARY	Theory	1. Global trading environment –recent trends in world trade in goods and services; Trends in India's foreign trade; Commercial policy instruments – tariff and non-tariff measures; Balance of payment account and its components; Commodity and other trading agreements; Regional economic cooperation; Forms of regional groupings;	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management

		Integration efforts among countries in Europe, North America and Asia; International Financial environment: International financial system and institutions; 2. Technical feasibility, Marketing feasibility and Technical feasibility and estimation of cost and demand analysis and commercial viability (this includes various methods such as qualitative methods like jury of executive method and Delphi method and time series methods like trend projection method, chain ratio, consumption level method, basics of econometric, regression methods, etc.) cost of projects, techniques of risk analysis, (measurement of risk- standard deviation, co-variance, range, coefficient of correlation, SWOT analysis, sensitivity analysis, scenario analysis, decision tree etc.) (only theoretical and conceptual) collaboration arrangement (it includes merger, acquisition, amalgamation, joint venture, takeover, PPP, turnkey, financial planning) (only conceptual part), overview of projected cash flow, balance sheet, budget, sources of funds (short term and long term), loan syndication (background knowledge only) tax consideration (recent provisions announced by government) in project preparation and legal aspects) (it includes exempted project incomes and deduction available and basic legal aspects of patents, trademarks, copyright, design act etc.)		
	Practicals	1. PowerPoint: preparing presentations, slides, handouts, speaker's notes – outlines – media clips – charts- graphs, adding the transitions to the slide show – special effects in detail – setting slide	1. B.Com. (Hons.): IV	1. BCH 4.3: Computer Applications in Business

		timings; Spreadsheet: creating a work book, rearranging worksheet, organizing charts and graphs, ranges and functions & formulae; mathematical, statistical, financial functions such as NPV, future value, IRR, EMI, compounding yearly, periodic and monthly, auto calculate using names in a formula		
	Tutorials	1. Regional economic cooperation; Forms of regional groupings; Integration efforts among countries in Europe, North America and Asia; International Financial environment: International financial system and institutions; 2. Technical feasibility, Marketing feasibility and Technical feasibility and estimation of cost and demand analysis and commercial viability	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management
Month	Type of Class	Topics	Course	Paper Code/Name
MARCH	Theory	1. Foreign exchange markets and risk management; Foreign investments – types and flows; Foreign investment in India perspective; Organisational structure for international business operations; Key Issues involved in making international production, finance, marketing and human resource decisions; international business negotiations; Developments and issues in international business: outsourcing and its potentials for India; Strategic alliances, mergers and acquisitions; role of IT in international business; international business and ecological considerations. 2. Business criterion of growth (elementary) liquidity and profitability (this included liquidity ratio i.e. current ratio and liquid ratio and profitability ratio) (numerical question of liquidity ratio).	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management
	Practicals	1. Spreadsheet: Formula editing, consolidation of data & data analysis- sorting list, filter & more filtering techniques – consolidate data in multiple worksheets	1. B.Com. (Hons.) - IV	1. BCH 4.3: Computer Applications in Business

		– what if analysis, goal seek, scenario manager, solver, lookup function – sub totals, nested – if, statistical analysis, data validation & protection – create a drop-down list from a range of cells – apply data validation to cells – copy data validation setting, remove data validation – find cell that have data validation protect cell data , using password to protect sheet and workbook – use validation to create dependent list, pivot table reports & pivot chart reports		
	Tutorials	1. Strategic alliances, mergers and acquisitions; role of IT in international business; international business and ecological considerations. 2. Business criterion of growth (elementary) liquidity and profitability (this included liquidity ratio i.e. current ratio and liquid ratio and profitability ratio) (numerical question of liquidity ratio).	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management
	Assignment	1. Topics allotment for making the assignments. 2. Topics allotment for making the assignments. 3. Topics for making workbook on computer.	1. B.Com. (Hons) - VI 2. B.Com. – VI 3. B. Com. (Hons) - IV	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management 3. BCH 4.3: Computer Applications in Business
	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. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management
Month	Type of Class	Topics	Course	Paper Code/Name
APRIL	Theory	1. Foreign Trade promotion measures and organizations in India; Special economic zones (SEZs) and 100% export oriented units (EOUs); Measures for promoting foreign investments into	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management

		and from India; Indian joint ventures and acquisitions abroad; Financing of foreign trade and payment terms. 2. Social cost benefit analysis in public and private sectors (UNIDO approach i.e. United Nations Industrial Development organization approach and L-M approach i.e. I.M.D. Little and Mirrless Approach), investment criterion and choice of techniques, theoretical aspects of shadow prices and social discount rate, and issues in project planning and management i.e. PERT and CPM.		
	Practicals	1. Practice on MS Word, MS PowerPoint, MS Excel, MS Access	1. B.Com. (Hons.) - IV	1. BCH 4.3: Computer Applications in Business
	Tutorials	1. Foreign Trade promotion measures and organizations in India; Special economic zones (SEZs) and 100% export oriented units (EOUs); Measures for promoting foreign investments into and from India; Indian joint ventures and acquisitions abroad; Financing of foreign trade and payment terms. 2. Social cost benefit analysis in public and private sectors (UNIDO approach i.e. United Nations Industrial Development organization approach and L-M approach i.e. I.M.D. Little and Mirrless Approach), investment criterion and choice of techniques, theoretical aspects of shadow prices and social discount rate, and issues in project planning and management i.e. PERT and CPM.	1. B.Com. (Hons) - VI 2. B.Com. - VI	1. DSE BCH 6.4- (c): International Business 2. Generic Elective BC 6.4 (b): Project Management



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.	1) B.com -IV 2) B.Com (H)-VI	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG
	Practical	1. Mathematics of Finance	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics
	Tutorials	1. Appointment and Removal of Auditor, Rights and Duties of a Company Auditor, Liabilities of Auditor.	1. B.Com (H)-VI	1. BCH-6.1-Auditing and CG
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. The Indian Contract Act, 1872	1) B.com -IV 2) B.Com (H)-VI 3) B.Com-II	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BC-2.2-Business Laws
	Practical:	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2- Business Mathematics

	Tutorials:	1. Major Corporate Failures	1. B.Com (H)-VI	1. BCH-6.1-Auditing and CG
	Assignment	1. Assignment form Chapter – Planning Online Business and Technology for Online Business. 2. Assignment from Chapter- Appointment and Removal of an Auditor, Rights and Duties of Auditor and Vouching.	1) B.Com-IV 2) B.Com (H)-VI	1. BCH-4.5(a) Entrepreneurship 2. BCH-6.1-Auditing and CG
MARCH	Theory	1. E-payment System 2. Business Ethics 3. Special Contracts	1) B.com (H)-IV 2) B.Com (H)-VI 3) B.Com-II	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BC-2.2-Business 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. 3. Test from Chapter- The Indian Contract Act, 1872	1. B.com (H)-IV 2. B.Com (H)-VI 3. B.Com-II	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BC-2.2-Business Laws
	Tutorials	1. Board Committees	1. B.Com (H)-VI	1. BCH-6.1-Auditing and CG

APRIL	Theory	1. Security and Legal Aspects of E-Commerce 2. Corporate Social Responsibility 3. The Sale of Goods Act, 1930	1) B.com-IV 2) B.Com (H)-VI 3) B.Com-II	1. BC-4.4(a) E-Commerce 2. BCH-6.1-Auditing and CG 3. BC-2.2-Business Laws
	Practical	1. Mathematics of Finance 2. Linear Programming	1.B.com (H)-IV	1. BCH-4.2-Busines Mathematics
	Tutorials	1. Corporate Social Responsibility	1) B.Com (H)-VI	1. BCH-6.1-Auditing and CG



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Shilpa

Department: Commerce

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY 2020	Theory	1Holding companies 2Banking companies 3Issue,Forfeiture& Reissue of shares	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		1Unit Costing 2 Job Costing 3Contract Costing	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		1Training and Development 2 Concept and importance 3 Identifying training and development needs 4Designing training programmes 5 Role specific and competency based training	B.Com(P) Semester VI	CP6.3 / Human Resource Management
	Practicals	Introduction to HTML,Tags and attributes	B.com(P) Semester IV	BC4.4(a) / E-Commerce(SEC)
	Tutorials	Doubt Clearing Session	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		Doubt Clearing Session	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		Case Studies Discussion	B.Com(P) Semester VI	CP6.3 / Human Resource Management
FEBRUARY 2020	Theory:	1 Amalgamation 2 Internal Reconstruction 3Redemption of Preference Shares	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		1Process Costing 2 Service Costing	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		1Evaluating training effectiveness 2 Training process outsourcing 3Management development systems 4 career development.	B.Com(P) Semester VI	CP6.3 / Human Resource Management
	Practicals:	Text formatting,Fonts &Hypertext Links	B.com(P) Semester IV	BC4.4(a) / E-Commerce(SEC)

	Tutorials:	Doubt Clearing Session	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		Doubt Clearing Session	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		Case studies discussion	B.Com(P) Semester VI	CP6.3 / Human Resource Management
	<u>Assignment :</u>	Amalgamation and Internal Reconstruction	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		Evaluate the budget estimate of a trip and segregate various sets of costs involved in it .	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		Evaluating Training effectiveness	B.Com(P) Semester VI	CP6.3 / Human Resource Management
MARCH 2020	Theory:	1Cash Flow Statement 2Financial Statements of Companies 3 Valuation of Goodwill &Shares	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		1Integral &Non-Integral systems 2Reconcilliation of Cost and Financial Statements	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		1Compensation: concept, policies and administration 2 job evaluation 3methods of wage payments and incentive plans	B.Com(P) Semester VI	CP6.3 / Human Resource Management
	Practicals:	Tables ,images,Lists,Forms,Frame s And Cascading style sheets	B.com(P) Semester IV	BC4.4(a) / E-Commerce(SEC)
	Tutorials:	Doubt Clearing Session	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		Doubt Clearing Session	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		Case Studies Discussion	B.Com(P) Semester VI	CP6.3 / Human Resource Management

	<u>Test</u>	Holding Company And Cash Flow Statement	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		Service Costing, Contract Costing & Reconciliation of Financial statements	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		Training & Development	B.Com(P) Semester VI	CP6.3 / Human Resource Management
APRIL 2020	Theory:	1 Buy-Back of shares 2 Issue & Redemption of Debentures	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		1. Capacity Level Cost 2 Treatment of certain items in Costing 3 ABC costing	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		1 Fringe benefits 2 Performance linked compensation.	B.Com(P) Semester VI	CP6.3 / Human Resource Management
	Practicals:	Test & Assignment of the topics covered as this is an SEC paper	B.com(P) Semester IV	BC4.4(a) / E-Commerce(SEC)
	Tutorials:	Doubt Clearing Session	B.Com(H) Semester II(A)	BCH2.2 / Corporate Accounting
		Doubt Clearing Session	B.com(H) Semester IV(A)	BCH4.1/ Cost Accounting
		Case studies discussion	B.Com(P) Semester VI	CP6.3 / Human Resource Management



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Arpita Kaul
Semester: II, IV & VI (2019-20)

Department: Commerce

Month		Topics	Course	Paper Code/Name
JAN 2020	Theory	AMALGAMATION, INTERNAL RECONSTRUCTION	B.Com H II	BCH 2.2 CORPORATE ACCOUNTING
		INTRODUCTION TO OB, DISCIPLINES CONTRIBUTING TO OB, OB MODEL, CHALLENGES OF OB	B.COM VI	BC6.2(e)ORGANIZA TIONAL BEHAVIOUR
	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 H IV	BCH 2.2 corporate accounting
		Case study on emotions	B.Com VI	BC6.2(e)Organizational Behaviour
FEBRUARY 2020	Theory:	HOLDING, VALUATION OF GOODWILL	B.Com H II	BCH 2.2 corporate accounting
		PERSONALITY, VALUES, ATTITUDES, EMOTIONS	B.Com VI	BC 6.2(e) Organizational Behaviour
	Practicals:	PRESENT VALUE, FUTURE VALUE, EQUATION OF	B.Com H IV	BCH 4.2Business Mathematics
	Tutorials:	Taking doubts and practice questions on holding and goodwill	B.Com H	BCH 2.2 corporate accounting
		Discussion on questionnaire selection, sample size etc.	B.Com	BC 6.2(e)Organizational

MARCH 2020	Theory	VALUATION OF SHARES, CASH FLOW, REDEMPTION OF PREFERENCE SHARE PERCEPTION, DECISION MAKING, INDIVIDUAL V/S GROUP, COMMUNICATION, JOHARI WINDOW	B.Com H B.Com	BCH 2.2 corporate accounting BC6.2(e) Organizational Behaviour
	Practicals	ANNUTIES	B.Com H	BCH 4.2 Business Mathematics
	Tutorial	Taking doubts and practice questions on valuation of shares, cash flow, redemption of share Case study	B.Com H	BCH 2.2 corporate accounting
	Assignment	Question on holding Question on personality and attitudes.	B.Com H	BCH 2.2 Corporate Accounting BC 6.2(e) Organizational Behaviour
APRIL 2020	Theory:	BANKING, FINAL ACCOUNT, REDEMPTION OF DEBENTURES TRANSACTIONAL ANALYSIS, ORGANIZATION CULTURE AND CLIMATE, CHANGE, STRESS,	B.Com H	BCH 2.2 corporate accounting BC 6.2 (e) Organizational Behaviour
	Practicals:	LINEAR PROGRAMMING	B.Com	BCH 4.2 Business Mathematics
	Tutorials: TEST	Doubts and practice questions on banking, final accounts and redemption of debentures After mid term break, in the second week of March	B.Com H	BCH 2.2 corporate accounting



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

Name of the Faculty: Dr. Ajit Singh

Department: Commerce

Semester : II/IV

Month		Topics	Course	Paper Code/Name
JANUARY-2020	Theory	1. Introduction, meaning & features, Administration of company laws, Kinds of companies.	1. B.Com (H)-II	1. BH 2.3: Corporate Laws
		2. Introduction to computer.	2. B.Com(H)-IV	2. BCH 4.3 Computer Application In Business.
	Tutorials /Practical:	1. Case laws presented by the Students.	1. B.Com (H)-II	1. BH 2.3: Corporate Laws
		2. Introduction to HTML	2. B.Com (P)-IV	2.BC 4.4: E-Commerce
FEBRUARY	Theory:	1. Formation of company, Memorandum, Association & Articles of Association.	1. B.Com (H)-II	1. BH 2.3: Corporate Laws
		2. Computer Networks.	2. B.Com(H)-IV	2. BCH 4.3 Computer Application In Business.
	Tutorials/Practical:	1. Case laws presented by the Students.	1. B.Com (H)-II	1.BH 2.3: Corporate Laws
		2. Practical Question on HTML	2. B.Com(P)-IV	2.BC 4.4: E-Commerce
	Assignment	Assignment and Presentation Given to the students.	1. B.Com (H)-II	1. BH 2.3: Corporate Laws
			2. B.Com(H)-IV	2. BCH 4.3 Computer Application In Business.
MARCH	Theory:	1.Prospectus, Share and share capital, Members and Shareholders, Director and Key Managerial personnel, Shareholders Meeting. 2.Introduction to Operating Systems. Database System.	1. B.Com (H)-II 2. B.Com(H)-IV	1. BH 2.3: Corporate Laws 2. BCH 4.3 Computer Application In Business.

	Tutorials/Practical:	1. Case laws presented by the Students. & Case Studies Discussed. 2. Creating Hypertext Links.	1. B.Com (H)-II 2. B.Com(P)-IV	1. BH 2.3: Corporate Laws. 2. BC 4.4: E-Commerce
	<u>Test</u>	Time schedule decided for conduct of Internal exam on 3 rd week of March.	1. B.Com (H)-II 2. B.Com(H)-IV	1. BH 2.3: Corporate Laws 2. BCH 4.3 Computer Application In Business.
APRIL	Theory:	1.Accounts and Audit, Dividend provisions, Winding up of Companies, The Depository System. 2.CAATS & Revision	1. B.Com (H)-II 2. B.Com(H)-IV	1. BH 2.3: Corporate Laws 2. BCH 4.3 Computer Application In Business.
	Tutorials/Practical:	1.Case Studies discussed. 2. Creating Forums Through HTML.	1. B.Com (H)-II 2. B.Com(P)-IV	1. BH 2.3: Corporate Laws. 2. BC 4.4: E-Commerce



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Even semester 2019-2020

Name of the Faculty: Priyanka

Department: Commerce

Semester : II/IV

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	1. (i)Introduction n- meaning , objectives, cost concepts and classification, and role of a cost accountant in an organization. (ii) Elements of cost : Material and labour- FIFO, LIFO, Weighted Average, Treatment of material losses, and Accounting and control of labour cost. 2. Matrices types and applications of Matrices	1. B.com(H) IV semester 2. B.com II sem	1. cost accounting 2. Business Mathematics and statistics
	Tutorials /Practical:	Problems related with above topics		
FEBRUARY	Theory:	1. (i) Overheads- Classification ,allocation, apportionment, absorption of overhead. (ii) contract costing (iii)Reconciliat ion of cost and financial accounts 2. Differentiation –concepts and rules of differentiation	1. B.com (H) IV sem 2. B.com II sem	1 Cost accounting 2 Business mathematics and statistics

	Tutorials/Practical:			
	<u>Assignment</u>	1. Assignment from labour costing and introduction of costing		
MARCH	Theory:	1. (i) Process costing (ii) service costing (iii) unit or job costing 2. (i) Application of differentiation (ii) simple and compound interest	1. B.com (h) IV sem 2. B.com II sem	1. Cost accounting 2. Business mathematics and statistics
	Tutorials/Practical:	Problems related with above topics		
	<u>Test</u>	1. Test from overhead , material costing and contract costing 2. Test from application of matrices	1. B.com (H) IV sem 2. B.com II sem	1. Cost accounting 2. Business mathematics and statistics
APRIL	Theory:	1. (i) Integral and non integral system (ii) Revision 2. (i) nominal ,effective and compounding and discounting of a sum using different types of differentiation (ii) Revision	1. B.com(H) IV sem 2. B.com II sem	1. Cost accounting 2. Business Mathematics and statistics
	Tutorials/Practical:	Problems related with above topics.		



SEMESTER WISE TEACHING PLAN (2019-20, EVEN SEMESTER)

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)
		Indian financial system, flow of funds matrix, financial regulators in India.	B.com VI	BC-6.1 (e) Financial Markets and Institutions

		Consumer and markets, experiencing dissatisfaction, quality and standardization.	B.Com (Hons.) VI	BC-6.2 (d) Consumer Affairs and Customer Care
	Tutorials /Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on contemporary events in the area of finance	B.Com (Hons.) VI B.com VI	BCH 6.2 (Goods and Services Tax) BC-6.1 (e) Financial Markets and Institutions

FEBRUARY	Theory:	Registration, Levy and collection of GST, supply of goods or services or both, place of supply. Money markets, capital markets, Indian debt market, equity markets.	B.Com (Hons.) VI B.com VI	BCH 6.2 (Goods and Services Tax) BC-6.1 (e) Financial Markets and Institutions
	Tutorials/Practicals:	Discussion on conceptual problems and solving numerical questions. Discussion on Google IPO, Libor scandal, establishment of NSE	B.Com (Hons.) VI B.com VI	BCH 6.2 (Goods and Services Tax) BC-6.1 (e) Financial Markets and Institutions

	<u>Assignment</u>	Case study:Harjot Singh Ahluwalia Vs. Spring Meadows(Privity of contract), Pepsodent vs Colgate(Misleading advertisement) Research paper presentation on allocated topics in finance	B.com (Hons.) VI	BC-6.2 (d) Consumer Affairs and Customer Care
MARCH	Theory:	Time and value of supply,, composition levy, input tax credit. Depository institutions, commercial banking, insurance,pension funds. Greivance redressal mechanism under CPA, leading cases.	B.Com (Hons.) VI B.com VI B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax) BC-6.1 (e) Financial Markets and Institutions BC-6.2 (d) Consumer Affairs and Customer Care

	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions. Discussion on Bank nationalization and mega mergers	B.Com (Hons.) VI B.com VI	BCH 6.2 (Goods and Services Tax) BC-6.1 (e) Financial Markets and Institutions
	<u>Test</u>	Case study, short answer type and numerical questions to asked.		
APRIL	Theory:	Payment of taxes, refund, Reverse charge mechanism, Job work. Regional rural banks, urban cooperative banks, credit institutions. Consumer movement in India	B.Com (Hons.) VI B.com VI	BCH 6.2 (Goods and Services Tax) BC-6.1 (e) Financial Markets and Institutions

	Tutorials/Practical:	Discussion on conceptual problems and solving numerical questions.	B.Com (Hons.) VI	BCH 6.2 (Goods and Services Tax)
		Discussion on Rural banking.	B.com VI	BC-6.1 (e) Financial Markets and Institutions



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Department of Commerce (Year 2019-20)
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 Corporate Accounting a) Issue of equity & Preference shares b) Redemption of Preference Shares c) Bonus call & Bonus Issue d) Buy – Back of shares	1. B.Com – (H) III Semester-VI 2. B.Com – (H) I Semester – II	1. BCH 6.2: Goods & Service Tax 2. BCH – 2.2: Corporate Accounting
	Practical	Computer Application in Business 1. Payroll 2. Loan sheet 3. DBMS	B.Com – (H) II Semester – IV	BCH 4.3: Computer Applications In Business
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 6) Reverse Charge Mechanism Corporate Accounting	1. B.Com – (H) III Semester-VI 2. B.Com – (H) I Semester – II	1. BCH 6.2: Goods & Service Tax 2. BCH – 2.2: Corporate Accounting

		a) Under – writing of shares b) Employee Stock Option Plan		
	Practical	Computer Application in Business 1. Capital Budgeting 2. DBMS	B.Com – (H) II Semester – IV	BCH 4.3: Computer Applications In Business
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 Corporate Accounting a) Issue of Debentures b) Redemption of Debentures	1. B.Com – (H) III Semester-VI 2. B.Com – (H) I Semester – II	1. BCH 6.2: Goods & Service Tax 2. BCH – 2.2: Corporate Accounting
	Practical	Computer Applications in Business 1. Pivot Table 2. What If Analysis	B.Com – (H) II Semester – IV	BCH 4.3: Computer Applications In Business
	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 – (H) I Semester – II	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 – (H) I Semester – II	1. BCH 6.2: Goods & Service Tax
Month	Type of Class	Topics	Course	Paper Code/Name

APRIL	Theory	GST & Custom Laws - Tax Invoice, Credit & Debit Notes, Audit in GST, Self Assessment Tax, E – Way Bills, Offences & Penalties & Appeals - Basic Concept of Custom Laws, Types of Custom Duties, Baggage Rules & Exemptions Corporate Accounting - Holding Company - Preparation of Consolidated Balance Sheet	- B.Com – (H) III Semester-VI - B.Com – (H) I Semester – II	- BCH 6.2: Goods & Service Tax - BCH – 2.2: Corporate Accounting
	Practical	Computer Applications In Business - Frequency distribution - Regression Analysis - Depreciation - Power Point Presentations - Mail Merge – MS Word	B.Com – (H) II Semester – IV	BCH 4.3: Computer Applications In Business



SEMESTER WISE TEACHING PLAN SRI VENKATESWARA COLLEGE

Name of the Faculty: Mohini Yadav

Department: Commerce

Semester : II/IV/VI (2019-20)

Month		Topics	Course	Paper Code/Name
JANUARY 2020	Theory	Matrices and Determinants – Concepts and Applications,	B.COM (H) – Sem IV	Business Mathematics BCH 4.2
		Matrices and Determinants – Concepts and Applications	B.COM – Sem II	Business Mathematics & Statistics BC2.3
	Tutorials /Practical:	Matrices and Determinants – Concepts and Applications	B.COM – Sem II	Business Mathematics & Statistics BC2.3
		Basics of Access and Excel – Loan Sheet, Capital Budgeting	B.COM (H) – Sem IV	Computer Applications in Business BCH 4.3
FEBRUARY 2020	Theory:	LPP (Formulation and Solution)	B.COM (H) – Sem IV	Business Mathematics BCH 4.2
		Differentiation – Concepts		
		Differentiation – Concepts & Applications	B.COM – Sem II	Business Mathematics & Statistics BC2.3
	Tutorials/Practical:	Matrices and Determinants – Applications	B.COM – Sem II	Business Mathematics & Statistics BC2.3
		MS Access questions upto 2 tables and Excel – Frequency Distribution, Depreciation	B.COM (H) – Sem IV	Computer Applications in Business BCH 4.3
	<u>Assignment</u>	Matrices and Determinants – Applications	B.COM – Sem II	Business Mathematics & Statistics BC2.3

MARCH 2020	Theory:	Differentiation – Applications, Partial Differentiation - Concepts	B.COM (H) – Sem IV	Business Mathematics BCH 4.2
		Determinants – Applications in Business	B.COM – Sem II	Business Mathematics & Statistics BC2.3
	Tutorials/Practical:	Determinants – Applications in Business	B.COM – Sem II	Business Mathematics & Statistics BC2.3
		MS Access questions up-to 3 tables and Excel – Regression, What-If-Analysis, Solver, Pivot	B.COM (H) – Sem IV	Computer Applications in Business BCH 4.3
	Test	Matrices and Determinants – Applications LPP – Graphical and Simplex	B.COM (H) – Sem IV	Business Mathematics BCH 4.2
		Matrices and Determinants – Applications	B.COM – Sem II	Business Mathematics & Statistics BC2.3
APRIL 2020	Theory:	Partial Differentiation – Application, Integration – Concept & Application	B.COM (H) – Sem IV	Business Mathematics BCH 4.2
		Mathematics of Finance	B.COM – Sem II	Business Mathematics & Statistics BC2.3
	Tutorials/Practical:	Mathematics of Finance	B.COM – Sem II	Business Mathematics & Statistics BC2.3
		MS Access questions up-to 3 tables and Excel – Ratio Analysis, Word, PPT	B.COM (H) – Sem IV	Computer Applications in Business BCH 4.3

**CHEMISTRY TEACHING
PLAN**

ALL TEACHERS

2019-20- EVEN SEMESTER

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,	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 ioneffect. 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	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

	<u>Assignment :</u>	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
	<u>Test</u>	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 after Group 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:			

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 II nd 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 II nd 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 III rd 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 II nd 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 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
	Tutorials:			

	<u>Assignment</u> :	Coordination chemistry and chemistry of s block elements	B.Sc. (H) Chemistry II nd 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 , Δ_t). Octahedral vs. tetrahedral coordination	B.Sc. (H) Chemistry II nd 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 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
	Tutorials:			
	<u>Test</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry II nd 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 II nd Year, Semester - IV (2020)	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination Chemistry
	Practicals:	Estimation of iron as Fe ₂ O ₃ by precipitating iron as Fe(OH) ₃ .	B.Sc. (H) Chemistry II nd 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 III rd Year, Semester - VI	INORGANIC CHEMISTRY IV
	Tutorials:			

MAY	Theory:			
	Practicals:			
	Tutorials:			

Name of the Faculty: Dr. Sanjay Kumar

Department: CHEMISTRY

Semester: II/IV/VI

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	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 of Strong acid vs. strong base 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 II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
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	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. 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 Cl). Organic preparation: (i) Oxime formation of cyclohexanone	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
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

	Practicals:	Comparison of the strengths of HCl and H₂ SO₄ by studying kinetics of hydrolysis of methyl acetate. 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 Semester IV B.Sc (P) Life Sciences Semester II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I
	Assignment and test			
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
	Practicals:	Study the kinetics of Iodide-persulphate reaction using (i) Initial rate method (ii) Integrated rate method Revisionary exercise and Viva	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester II	C X: PHYSICAL CHEMISTRY IV 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			

Name of the Faculty: Dr. Sharda Pasricha Department: CHEMISTRY

Semester: 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.) II nd Year, Semester IV	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V 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.) I st Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

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, λ_{max}, Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption; Application of Woodward Rules for calculation of λ_{max} 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

		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.) I st Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
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) 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.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) IInd Year, Semester IV B.Sc. CHEMISTRY (Hons.) Ist Year, Semester II	CHEMISTRY PRACTICAL –CC-XIV LAB: Organic Chemistry V CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I
	<u>Assignment 1</u> <u>(8 marks)</u> <u>Crossword</u> <u>(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.) II nd Year, Semester IV	CHEMISTRY PRACTICAL –CC-IX LAB: Organic Chemistry III
		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.) I st Year, Semester II	CHEMISTRY PRACTICAL –CC-III LAB: Organic Chemistry I

Name of the Faculty: Dr. Shefali Shukla

Department: Chemistry

Semester: II/IV/VI

Month		Topic	Course	Paper
January	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, 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 cycloalkanes and relative stability, Baeyer strain theory, Cyclohexane conformations with energy diagram, Axial and equatorial positions. Conformations of monosubstituted cyclohexanes.	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I: Basics and Hydrocarbons
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters)	B. Sc. (H) Chemistry II year, Semester IV	Practical C – IX Lab
		Preparation of shampoo. Preparation of talcum powder.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES
	Tutorials:	NA	NA	NA
February	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. General methods of preparation- Wurtz and Wurtz Fittig reaction, Corey House synthesis, physical	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I: Basics and Hydrocarbons

		and chemical properties of alkanes, Free radical substitutions; Halogenation, concept of relative reactivity v/s selectivity.		
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters)	B. Sc. (H) Chemistry II year, Semester IV	Practical C – IX Lab
		Preparation of enamels. Preparation of hair remover.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES
	Tutorials:	NA	NA	NA
	Assignment	Basic concepts of Organic Chemistry, Stereochemistry	B. Sc. (H) Chemistry Iyr Semester II	Organic Chemistry I: Basics and Hydrocarbons
March	Theory:	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), <i>syn</i> and <i>anti</i> -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	Organic Chemistry I: Basics and Hydrocarbons
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols, carbonyl compounds and esters) Functional group test for nitro, amine and amide groups.	B. Sc. (H) Chemistry II year, Semester IV	Practical C – IX Lab
		Preparation of face cream.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES
	Tutorials:	NA	NA	NA
	Test	Basic concepts, Stereochemistry,	B. Sc. (H)	Organic Chemistry

		Alkene- Preparation , Electrophilic addition reactions	Chemistry I year, Semester II	I:Basics and Hydrocarbons
April	Theory:	Reactions of alkynes; acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, Alkylation of terminal alkynes. Concept of Aromaticity, Huckel's rule, aromatic character of arenes, cyclic carbocations and carbanions with suitable examples and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism. Directing effects of groups in electrophilic substitution.	B. Sc. (H) Chemistry I year, Semester II	Organic Chemistry I:Basics and Hydrocarbons
	Practicals:	Qualitative analysis of unknown organic compounds containing simple functional groups (alcohols, carboxylic acids, phenols , carbonyl compounds and esters) Functional group test for nitro, amine and amide groups.	B. Sc. (H) Chemistry II year, Semester IV	Practical C – IX Lab
		Preparation of nail polish and nail polish remover.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES
	Tutorials:	NA	NA	NA

Name of the Faculty: Deepti Sharma

Department: Chemistry

Semester : IV/ V

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	B.Sc.(H) Chemistry Second Year Semester IV	Organic Chemistry III
		2. Qualitative analysis of unknown organic compounds containing simple functional groups	B.Sc.(H) Chemistry Third Year Semester VI	Organic Chemistry V
		1. Qualitative analysis of unknown organic compounds containing monofunctional groups	B.Sc.(H) Chemistry Second Year Semester IV	Pesticide Chemistry
FEBRUARY	Theory	Nitrogen Containing Functional Groups cont. Polynuclear Hydrocarbons.	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. Preparation of simple organophosphates.	B.Sc.(H) Chemistry Second Year Semester IV	Pesticide Chemistry

	<u>Assignment</u> :	Given Assignment for Nitrogen containing functional group and polynuclear hydrocarbons		
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
	<u>Test</u>	Syllabus included Nitrogen containing compounds, polynuclear hydrocarbons.		
APRIL	Theory:	Alkaloids	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
		2. Mock Test		
		1. Practiced qualitative analysis of unknown organic compounds containing monofunctional groups.	B.Sc.(H) Chemistry Third Year Semester VI	Organic Chemistry V
		2. Mock Test		
		1. Final Practical Examination.	B.Sc.(H) Chemistry Second Year	Pesticide Chemistry

MAY	Theory:			
	Practicals:			
	Tutorials:			

Name of the Faculty: Dr. PRAGYA GAHLOT
Semester: I/III/V

Department: CHEMISTRY

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 FNR, GOSUB, RETURN,	B.Sc. CHEMISTR Y (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practicals	Computer programs using QBASIC based on numerical methods (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. CHEMISTR Y (Hons.) III Year, Semester VI B.Sc. CHEMISTR Y (Hons.) I Year, Semester II	DSE: Applications of computers in Chemistry C IV: PHYSICAL CHEMISTRY I lab

February	Theory:	QBASIC programs for Chemistry problems - Example: plotting van der Waal Isotherms (Simple Problem, available in general text	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practicals:	Computer programs using QBASIC based on numerical methods (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	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DSE: Applications of computers in Chemistry C IV: PHYSICAL CHEMISTRY I lab
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, Matrix addition and multiplication, Statistical analysis.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
	Practicals:	Numerical curve fitting, linear regression numerical differentiation integration (f) Determination of enthalpy of hydration of salt. G) Determination of integral enthalpy (endothermic and exothermic) solution of salts.	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI B.Sc. CHEMISTRY (Hons.) I Year, Semester II	DSE: Applications of computers in Chemistry C IV: PHYSICAL CHEMISTRY I lab

	<u>Assignment :</u>		B.Sc. CHEMISTR Y (Hons.) III Year,	DSE: Applications of computers in Chemistry
	<u>Test</u>		B.Sc. CHEMISTR Y (Hons.) III Year	DSE: Applications of computers in Chemistry

April	Theory:	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++);	B.Sc. CHEMISTRY (Hons.) III Year, Semester VI	DSE: Applications of computers in Chemistry
		Revision		

Name of the Faculty: Dr. Vinita Kapoor

Department:

Chemistry

Month		Topics	Course	Paper Code/Name
JAN	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 between heat capacities, 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.	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	C-IV: Physical chemistry-II

	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 1. 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	Theory	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. 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). 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 equation of state.	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
	Practicals	1. Acid hydrolysis of methyl acetate with hydrochloric acid. 2. Comparison of the strengths of HCl and H ₂ SO ₄ by studying kinetics of hydrolysis of methyl acetate.	B.Sc. (Hons.) Chemistry sem IV	C X: <i>PHYSICAL CHEMISTRY IV</i>
	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	Theory	Third Law: 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. 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. 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. (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
	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. entropy/ enthalpy change from heat capacity data).	B.Sc. (Hons.) Chemistry sem VI	CHEMISTRY-DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
Month			Course	Paper Code/Name
APRIL	Theory	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. Application of colligative properties in calculating molar masses of normal, dissociated and associated solutes in solutions. Concept of activity and activity coefficients	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.	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. <i>e.g.</i> van der Waals isotherm, Compressibility 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
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Name of the Faculty: DR. DEVENDRA KUMAR VERMA

Department: Chemistry

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	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	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		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	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	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

FEBRUARY		Section A: Physical Chemistry Thermochemistry 1.Determination of heat capacity of calorimeter for different volumes. 2.Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. 3.Determination of enthalpy of ionization of acetic acid. 4.Determination of integral enthalpy of solution of salts (KNO₃, NH₄Cl).	GE 2 Chemistry	Chemical Energetics, Equilibria & Functional Organic Chemistry I
	Tutorials			
	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 square velocity, collision cross section, collision number, collision frequency,	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variations of enthalpy of reaction with temperature - Kirchhoff's equation.	B.Sc. Life Science I year (II semester)	Chemical energetics, equilibria and functional organic chemistry I
	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

		5.Determination of enthalpy of hydration of copper sulphate. 6. Study of the solubility of benzoic acid in water and determination of H.	GE 2 Chemistry	Chemical Energetic, Equilibria & Functional Organic Chemistry I
	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 ⁰ .	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		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 ⁰ .	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry I
	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.	GE 4 Chemistry	Chemistry of S- And P-Block Elements, States of Matter & Chemical Kinetics
		(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
		Ionic equilibria pH measurements a) Measurement of pH of different solutions like aerated drinks, fruit juices, shampoos and soaps (use dilute solutions of soaps and shampoo.	GE 2 Chemistry	Chemical Energetic, Equilibria & Functional Organic Chemistry I
	Tutorials:			

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
		Le Chatelier's principles. Relationships between K_p , K_c and K_x , for reaction involving ideal gases.	B.Sc. Life Science I year (II semester)	Chemical energetic, equilibria and functional organic chemistry I
	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 H ₂ SO ₄ by studying kinetics of hydrolysis of methyl acetate	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	B.Sc Life Science II year (IV Semester)	Chemistry of s & p block elements, States of Matter and Phase Equilibrium
		b) 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.	GE 2 Chemistry	Chemical Energetic, Equilibria & Functional Organic Chemistry I
	Tutorials:			

Name of the Faculty: Dr. Rangarajan T. M.

Department: Chemistry

Semester: II/IV/VI

Month		Topic	Course	Paper
January	Theory:	Structure and classification of alcohols, Preparation: Methods of preparation of 1 ^o , 2 ^o & 3 ^o by using Grignard reagent, ester hydrolysis and reduction of aldehydes, ketones, carboxylic acids and esters. Reactions: Acidic character of alcohols Reactions of alcohols with sodium, with HX (Lucas Test), esterification, oxidation,	B. Sc. (P) Life Science-A, I year (FLS)	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Structure & aromatic character of Benzene and its preparation. Electrophilic substitution reactions.	B. Sc. (P) Life Science-B, I year (FLS)	
		Structure elucidation of naphthalene, preparation and properties of naphthalene.	B. Sc. (P) Life Science-III year (TLS)	DSE Chem-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And Uv, Ir Spectroscopy
	Practicals:	Determination of heat capacity of calorimeter and Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Oxime of cyclohexanone preparation.	B. Sc. (P) Life Science-B, I year (FLS), B-III	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals)
	Practicals:	Qualitative analysis of unknown organic compounds containing monofunctional groups (Theory, introduction, Known compounds given)	B. Sc. (H) Chemistry, III Year (TCH)	CHEMISTRY - C XIV: Organic Chemistry V
	Practicals:	Organic preparation: (i) Oxime formation of cyclohexanone	B. Sc. (H) Generic Elective (GE-II) Paper	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
February	Theory:	Oppeneauer Oxidation. Oxidation and Pinacol-Pinacolone rearrangement. Preparation of phenols from cumene, diazonium salts and benzene sulphonic acid. Reactions: Directive influence of OH group and Electrophilic substitution reactions, viz. nitration, halogenation, sulphonation.	B. Sc. (P) Life Science-A, I year (FLS)	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

		Electrophilic substitution reactions and side chain oxidation. Williamson's ether synthesis, Cleavage of ethers with HI.	B. Sc. (P) Life Science-B, I year (FLS)	DSE Chem-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And Uv, Ir Spectroscopy
		Properties of anthracene. Electrophilic and nucleophilic substitution: Furan	B. Sc. (P) Life Science-III year (TLS)	
	Practicals:	Determination of integral enthalpy of solution of salts (KNO ₃ , NH ₄ Cl). Benzoylation of amines/phenols	B. Sc. (P) Life Science-B, I year (FLS), B-III	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (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)	CHEMISTRY - C XIV: Organic Chemistry V
		Determination of heat capacity of calorimeter using different volumes. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Organic preparations: Oxime formation of cyclohexanone 2,4 DNP derivative preparation of cyclohexanone	B. Sc. (H) Generic Elective (GE-II) Paper	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
March	Theory:	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. Preparation of carbonyl compounds from acid chlorides and from nitriles.	B. Sc. (P) Life Science-A, I year (FLS)	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Preparation: from acid chlorides and from nitriles. Reactions: Nucleophilic addition, nucleophilic addition – elimination reaction including reaction with HCN, ROH, NaHSO ₃ , NH ₂ -G	B. Sc. (P) Life Science-B, I year (FLS)	

		derivatives. Electrophilic and nucleophilic substitution: Pyrrole, Thiophene.	B. Sc. (P) Life Science-III year (TLS)	DSE Chem-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And Uv,Ir Spectroscopy
	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-III	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals)
		Qualitative analysis of unknown organic compounds containing monofunctional groups (Unknown compounds given), Preparation of methyl orange.	B. Sc. (H) Chemistry, III Year (TCH)	CHEMISTRY - C XIV: Organic Chemistry V
		Determination of heat capacity of calorimeter using different volumes. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Organic preparations: Oxime formation of cyclohexanone 2,4 DNP derivative preparation of cyclohexanone	B. Sc. (H) Generic Elective (GE-II) Paper	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
	Assignment	Assignment-I	B. Sc. Life Science- I year (Sec A&B) and B. Sc. (P) Life Science-III year (TLS)	Atomic Structure, Bonding, General Organic Chemistry DSE Chem-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And Uv,Ir Spectroscopy
April	Theory:	Reactions: Nucleophilic addition, nucleophilic addition – elimination reaction including reaction with HCN, ROH, NaHSO ₃ , NH ₂ -G derivatives. Iodoform test, Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation. Clemmensen reduction, Wolff Kishner reduction, Meerwein-Ponndorf	B. Sc. (P) Life Science-A, I year (FLS)	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I

		Verley reduction. Iodoform test, Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation. Clemmensen reduction, Wolff Kishner reduction, Meerwein-Ponndorf Verley reduction. Electrophilic and nucleophilic substitution: Pyridine. Active methylene compounds: Preparation: Claisen ester condensation. Keto-enol tautomerism.	B. Sc. (P) Life Science-B, I year (FLS) B. Sc. (P) Life Science-III year (TLS)	DSE Chem-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons And Uv,Ir Spectroscopy
	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 Qualitative analysis of unknown organic compounds containing monofunctional groups (Unknown compounds given), Preparation of urea formaldehyde resin. 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: Bromination of aniline/phenol	B. Sc. (P) Life Science-B, I year (FLS), B-III B. Sc. (H) Chemistry, III Year (TCH) B. Sc. (H) Generic Elective (GE-II) Paper	Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I (Practicals) CHEMISTRY - C XIV: Organic Chemistry V Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
	Test			

Name of the Faculty: Ms. Laishram Saya Devi

Department: CHEMISTRY

Semester: II/IV/VI

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 29 infinite dilution. Kohlrausch law of independent migration of ions. Debye-Hückel-Onsager equation, Wien effect, Debye-Falkenhagen effect. IONIC EQUILIBRIA Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, 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 for different salts. Buffer solutions. Solubility and solubility product of sparingly soluble salts, Applications of solubility product principle.	B.Sc.(H) CHEMISTRY Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, EQUILIBRIA, FUNCTIONAL ORGANIC CHEMISTRY-I
	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 of Strong acid vs. strong base Introductory class 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. 1. Preparations: Organic preparation: (i) Benzoylation of aniline/phenol (ii) Oxime formation of cyclohexanone	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I

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. CHEMICAL EQUILIBRIUM: Free energy change in a chemical reaction. Thermodynamic derivation of the law of chemical equilibrium. Distinction between G and G_0, Le Chatelier's principle. Relationships between K_p, K_c and K_x for reactions involving ideal gases. 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.	B.Sc.(H) CHEMISTRY Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, EQUILIBRIA, FUNCTIONAL ORGANIC CHEMISTRY-I
	Practical:	Conductometric titrations: (i) Weak acid vs. strong base (ii) Mixture of strong acid and weak acid vs. strong base. Study of kinetics of: (i) Acid hydrolysis of methyl acetate with hydrochloric acid. (ii) Saponification of ethyl acetate. Semi-micro qualitative analysis of mixtures (two anions and two cations and excluding insoluble salts) Thermochemistry: (1). Determination of heat capacity of calorimeter using different volumes. (2). Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Organic preparations: (1) Oxime formation of Benzaldehyde (2) 2,4 DNP derivative preparation of cyclohexanone	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I

MARCH	Theory:	PHOTOCHEMISTRY: Characteristics of electromagnetic radiation, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws, of photochemistry, quantum yield, actinometry. Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variation of enthalpy of a reaction with temperature — Kirchhoff's equation.	B.Sc.(H) CHEMISTRY Semester IV GE-II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, EQUILIBRIA, FUNCTIONAL ORGANIC CHEMISTRY-I
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	Practicals:	Comparison of the strengths of HCl and H ₂ SO ₄ 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. Determination of integral enthalpy of solution of salts (KNO ₃ , NH ₄ Cl). Determination of enthalpy of hydration of salts (CuSO ₄) Organic preparation: (i) Semicarbazone of Acetophenone	B.Sc. (H) CHEMISTRY Semester IV B.Sc.(P) Life Science Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMISTRY OF s- AND p-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS CHEMICAL ENERGETICS, EQUILIBRIA, FUNCTIONAL ORGANIC CHEMISTRY-I
	Assignment and test			
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 CHEMICAL ENERGETICS: Statement of Third Law of thermodynamics and calculation of absolute entropies of substances.	B.Sc.(H) CHEMISTRY Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, EQUILIBRIA, FUNCTIONAL ORGANIC CHEMISTRY-I -I

	Practicals:	Study the kinetics of Iodide-persulphate reaction using (iii) Initial rate method (iv) (ii)Integrated rate method Mixture analysis exercises 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: Bromination of aniline/phenol	B.Sc. (H) CHEMISTRY Semester IV B.Sc (P) Life Sciences Semester IV GE II	C X: PHYSICAL CHEMISTRY IV 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 REVISION AND PREVIOUS YEARS QUESTION PAPERS DISCUSSION	B.Sc.(H) CHEMISTRY Semester IV GE II	C X: PHYSICAL CHEMISTRY IV CHEMICAL ENERGETICS, CHEMICAL EQUILIBRIUM, IONIC EQUILIBRIUM, FUNCTIONAL GROUPS-I

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	Gravimetric Analysis: i. Estimation of nickel (II) using Dimethylglyoxime (DMG). Inorganic Preparations: i. Tetraamminecopper (II) sulphate, $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O}$ ii. Acetylacetonate complexes of $\text{Cu}^{2+}/\text{Fe}^{3+}$	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III

	(i) Paper chromatographic separation of Co^{2+} and Ni^{2+}. (ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the R_f values.	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN 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
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Practicals:	ii. Estimation of copper as CuSCN iii. Estimation of iron as Fe_2O_3 by precipitating iron as $\text{Fe}(\text{OH})_3$. Inorganic Preparations: iii. Tetraamminecarbonatocobalt (III) nitrate iv. Potassium tri(oxalato)ferrate(III)	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III
	(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	B.Sc. (Hons.) Chemistry III Year	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
Tutorials:	NA	NA	NA

	<u>Assignment :</u>	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:	Estimation of Al(III) by precipitating with oxine and weighing as Al(oxine) ₃ (aluminium oxinate). Properties of Complexes i. Measurement of 10 Dq by spectrophotometric method	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III
		(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:	ii. Verification of spectrochemical series. iii. Synthesis of ammine complexes of Ni(II) and its ligand exchange reactions (e.g. bidentate ligands like acetylacetone, DMG, glycine) by substitution method.	B.Sc. (Hons.) Chemistry II Year	C VIII: INORGANIC CHEMISTRY III
		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
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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
		Application of visible, ultraviolet and Infrared spectroscopy in organic molecules.	B.Sc. Life Sciences (Hons.) III Year, Semester VI	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY
	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
		Organic Preparations (i) Bromination of acetanilide use green method (ii) Nitration of nitrobenzene use green method. Preparation of talcum powder.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II B.Sc. Life Science (prog.) III Year, Semester VI	ORGANIC CHEMISTRY PRACTICALS CHEMISTRY OF COSMETICS & PERFUMES Practical
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
		Electromagnetic radiations, electronic transitions, λ_{max} & ϵ_{max} , m chromophore, auxochrome, bathochromic and hypsochromic shifts. Application of electronic spectroscopy and Woodward rules for calculating λ_{max} of conjugated dienes and λ_{max} of unsaturated compounds.	B.Sc. Life Sciences (prog.) III Year, Semester VI	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY

	Practicals:	To calculate alkalinity in given sample of pesticide formulations as per BIS specifications. Purification of organic compounds by crystallization using the following solvents: (a) Water (b) Alcohol (c) Alcohol-Water Detection of extra elements. Preparation of shampoo. Preparation of enamels.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV B.Sc. CHEMISTRY (Hons.) I Year, Semester II B.Sc. Life Science (prog.) III Year, Semester VI	SEC 11: PESTICIDE CHEMISTRY PRACTICALS ORGANIC CHEMISTRY PRACTICALS CHEMISTRY OF COSMETICS & PERFUMES Practical
MARCH	Theory:	synthesis and technical manufacture and uses of representative pesticides in the following classes: Organophosphates (Malathion, Parathion), Carbamates (Carbofuran and carbaryl). Infrared radiation and types of molecular vibrations, functional group and fingerprint region.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV B.Sc. Life Sciences (prog.) III Year, Semester VI	SEC 11: PESTICIDE CHEMISTRY ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY

Practicals:	Preparation of phenylethylamine thiocarbamate as organic pesticide.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY 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
	Preparation of hair remover. Preparation of face cream, Preparation of nail polish and nail polish remover.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
<u>Assignment :</u>	To solve last 4 semesters Pesticides chemistry question papers.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
	To solve last 3 years CBCS organic question papers.	B.Sc. Life Sciences, III Year, Semester VI	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY

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
		IR spectra of alkalies, alkenes and simple alcohols (inter and intramolecular hydrogen bonding), aldehydes, ketones, carboxylic acids and their derivatives (effect of substitution on -C=O stretching absorptions).	B.Sc. Life Sciences (prog.) III Year, Semester VI	ORGANOMETALLICS, BIOINORGANIC CHEMISTRY, POLYNUCLEAR HYDROCARBONS AND UV, IR SPECTROSCOPY
	Practicals:	Practice exercise.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY PRACTICALS
		Practice exercise.	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	ORGANIC CHEMISTRY PRACTICALS
		Practice exercise.	B.Sc. Life Science (prog.) III Year, Semester VI	CHEMISTRY OF COSMETICS & PERFUMES Practical
	<u>Test</u>	Upto organophosphates as pesticides.	B.Sc. CHEMISTRY (Hons.) II Year, Semester IV	SEC 11: PESTICIDE CHEMISTRY
		Aromatic Hydrocarbon	B.Sc. CHEMISTRY (Hons.) I Year, Semester II	CHEMISTRY – CIII: ORGANIC CHEMISTRY - I Basics and Hydrocarbons

Name of the Faculty: Dr. Akanksha Gupta
Chemistry

Department:

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 II nd 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 III rd Year, Semester - VI	DSE: Analytical Methods in Chemistry
		Metallurgy: General Principles of Metallurgy 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 II nd Year, Semester - IV	CC-IV Chemistry of <i>s</i> - and <i>p</i> -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 II nd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination
		Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations	B.Sc. (H) Chemistry III rd Year, Semester - VI	INORGANIC CHEMISTRY IV
		Preparation (i) tetraamminecopper (II) sulphate (ii) potassium trioxalatoferate trihydrate	B.Sc. Life Sciences III rd 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 and sodium cobaltinitrite.	B.Sc. (H) Chemistry II nd 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 III rd Year, Semester - VI	DSE: Analytical Methods in Chemistry
		Hydrometallurgy with reference to cyanide process for silver and gold. Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni): electrolytic, oxidative refining, van Arkel-de Boer process and Mond's process.	B.Sc. Life Sciences II nd Year, Semester - IV	CC-IV Chemistry of <i>s</i> - and <i>p</i> -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 II nd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination
		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)	B.Sc. Life Sciences III rd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials:			
	Assignment :	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry II nd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination
		UV visible, Electroanalytical techniques	B.Sc. (H) Chemistry III rd Year, Semester - VI	DSE: Analytical Methods in Chemistry

		Chemistry of s and p block elements	B.Sc. Life Sciences II nd Year, Semester - IV	CC-IV Chemistry of <i>s</i> - and <i>p</i> -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
		Compounds of <i>s</i> - and <i>p</i> -Block Elements: 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 ₂ H ₄ , N ₃ H, NH ₂ OH), Oxoacids of P	B.Sc. Life Sciences II nd Year, Semester - IV	CC-IV Chemistry of <i>s</i> - and <i>p</i> -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 III rd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials:			
	<u>Test</u>	Coordination Chemistry and transition elements	B.Sc. (H) Chemistry II nd Year, Semester - IV	CHEMISTRY – C VIII: INORGANIC CHEMISTRY – III Coordination
	<u>Test</u>	UV visible, thermal method of analysis and Qualitative and quantitative aspects of analysis	B.Sc. (H) Chemistry III rd Year, Semester - VI	DSE: Analytical Methods in Chemistry
	<u>Test</u>	Chemistry of s and p block elements	B.Sc. Life Sciences II nd Year, Semester - IV	CC-IVChemistry of <i>s</i> - and <i>p</i> -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 II nd 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 III rd Year, Semester - VI	DSE: Analytical Methods in Chemistry
		Oxoacids of S and Cl Halides and oxohalides: PCl ₃ , PCl ₅ , SOCl ₂ and SO ₂ Cl ₂	B.Sc. Life Sciences II nd Year, Semester - IV	CC-IVChemistry of <i>s</i> - and <i>p</i> -block elements, States of matter and Chemical Kinetics

	Practicals:	Estimation of iron as Fe_2O_3 by precipitating iron as $\text{Fe}(\text{OH})_3$.	B.Sc. (H) Chemistry II nd 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 III rd Year, Semester - V	INORGANIC CHEMISTRY IV
		Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups ($-\text{COOH}$, 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 III rd Year, Semester - VI	Organometallics, bioinorganic chemistry, polynuclear hydrocarbons and uv, ir spectroscopy
	Tutorials:			
MAY	Theory:			
	Practicals:			
	Tutorials:			

Name of the Faculty: Dr. Rekha Yadav

Department: Chemistry

Semester:

II/IV/VI

Month		Topic	Course	Paper
January	Theory:	Ionic Equilibria Strong, moderate and weak electrolytes, Degree of ionization, , factors affecting degree of ionization.	B. Sc. (P) Life Sciences I year, Semester II (Section A and B)	CC-2: Chemical Energetics, Equilibria and Functional Group Organic
		The concept of reaction rates. Effect of temperature, pressure, catalyst and other factors on reaction rates. Order and molecularity of a reaction.	GE-IV	GE-IV: CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals:	Teaching basic programming, Roots of equations: (e.g. volume of gas using van der Waals equation and comparison with ideal gas, pH of a weak acid). Ascending- descending programmes	B. Sc. (H) Chemistry III year, Semester VI	Practical DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		(i) Paper chromatographic separation of Co^{2+} and Ni^{2+} . (ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the R_f values.	B.Sc. (Hons.) Chemistry III Year Semester VI	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		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	Practical CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Preparation of shampoo. Preparation of talcum powder.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES

	Tutorials:	NA	NA	NA
February	Theory:	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.	B. Sc. (P) Life Sciences I year, Semester II (Section A and B)	CC-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic
		Derivation of integrated rate equations for zero, first and second order reactions (both for equal and unequal concentrations of reactants). Half-life of a reaction. General methods for determination of order of a reaction. Concept of activation energy and its calculation from	GE-IV	GE-IV: CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals:	Numerical differentiation (e.g., change in pressure for small change in volume of a van der Waals gas, potentiometric titrations). Matrix operations. Graphic programs related to Chemistry problems	B. Sc. (H) Chemistry III year, Semester VI	Practical DSE: APPLICATIONS OF COMPUTERS IN 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	B.Sc. (Hons.) Chemistry III Year Semester VI	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY

		concentration by spectrophotometry. Analysis of soil: (i) Determination of pH of soil. (ii) Total soluble salt		
		Determination of integral enthalpy of solution of salts (KNO ₃ , NH ₄ Cl). Determination of enthalpy of hydration of copper sulphate. Benzoylation of amines/phenols. Oxime of aldehydes and ketones.	B. Sc. (P) Life Sciences I year, Semester II	Practical CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Preparation of enamels. Preparation of hair remover.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES
	Tutorials:	NA	NA	NA
	Assignment	Ionic Equilibria	B. Sc. (P) Life Sciences I year, Semester II (Section A and B)	CC-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic
	Assignment	Assignment-I	GE-IV	GE-IV: CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
March	Theory:	Buffer solutions, Henderson-Hasselbach equation. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.	B. Sc. (P) Life Sciences I year, Semester II (Section A and B)	CC-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic
		Arrhenius equation. Theories of Reaction Rates: Collision theory and Activated Complex theory of bimolecular reactions. Comparison of the two theories (qualitative	GE-IV	GE-IV: CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS

		treatment only). Forms of solids. Symmetry elements, unit cells, crystal systems, Bravais lattice types and identification of lattice planes.		
	Practicals:	Numerical integration (e.g. entropy/ enthalpy change from heat capacity data). Probability distributions (gas kinetic theory) and mean values. Graphic -van der Waals isotherm, Compressibility versus pressure curves	B. Sc. (H) Chemistry III year, Semester VI	Practical DSE: APPLICATIONS OF COMPUTERS IN CHEMISTRY
		(iii) Estimation of calcium, magnesium (iv) Qualitative detection of nitrate, phosphate	B.Sc. (Hons.) Chemistry III Year, Semester VI	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		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. 2,4- dinitrophenylhydrazine of aldehydes and ketones	B. Sc. (P) Life Sciences I year, Semester II	Practical CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Preparation of face cream.	B. Sc. (P) Life Sciences III year, Semester VI	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES
	Tutorials:	NA	NA	NA
	Test	Test-I	B. Sc. (P) Life Sciences I year,	CC-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic

			Semester II (Section A and B)	
	Test	Test-I	GE-IV	GE-IV: CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
April	Theory:	Numerical-solubility product of sparingly soluble salts.	B. Sc. (P) Life Sciences I year, Semester II (Section A and B)	CC-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic
		Laws of Crystallography - Law of constancy of interfacial angles, Law of rational indices. Miller indices. X-Ray diffraction by crystals, Bragg's law. Structures of NaCl, KCl and CsCl (qualitative treatment only). Defects in crystals. Glasses and liquid crystals	GE-IV	GE-IV: CHEMISTRY OF S- AND P-BLOCK ELEMENTS, STATES OF MATTER & CHEMICAL KINETICS
	Practicals:	Graphics-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. (H) Chemistry III year, Semester VI	Practical DSE: APPLICATIONS OF COMPUTERS IN 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, Semester VI	DSE LAB: ANALYTICAL METHODS IN CHEMISTRY
		Bromination of phenol/aniline Semicarbazone of aldehydes and ketones	B. Sc. (P) Life Sciences I year, Semester II	Practical CHEMISTRY –Core Paper-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
		Preparation of nail polish and nail polish	B. Sc. (P) Life	Practical SEC: CHEMISTRY OF COSMETICS & PERFUMES

		remover.	Sciences III year, Semester VI	
	Tutorials:	NA	NA	NA

Name of the Faculty: Dr. Balendra
Semester: II/IV/VI

Department: Chemistry

Month		Topic	Course	Paper
January	Theory:	The general introduction of cosmetic products. Study, preparation of Hair dyes, and Hair Spray Structure of haloalkanes, and their classification as primary, secondary and tertiary alkyl halides.	B.Sc. (P) Life Sciences Sem-VI B. Sc. (P) Life Sciences Sem-II	(SEC-10): Chemistry of cosmetics and Perfumes CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional group and their derivative (i) To calculate acidity in given sample of pesticide formulations as per BIS specifications. (ii) Market Survey Organic preparation: Benzoylation of aniline and B-naphthol Organic preparation: Organic preparation: (i) Oxime formation of cyclohexanone	B.Sc.(P) Life Sciences Sem-VI B.Sc. (H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-II GE II:	DSE-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy SEC-11: PESTICIDE CHEMISTRY PRACTICALS CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA

February	Theory:	The general introduction of shampoo, suntan lotion, face powder and their characterization and method of preparation, Reaction of alkyl halides (SN1, SN2 and SNi), Nucleophile substitution reaction: Hydrolysis, nitrite and nitro formation, nitrile, isonitrile and Williamson ether synthesis	B.Sc.(P) Life Sciences Sem-VI B.Sc.(P) Life Sciences Sem-II	(SEC-10): Chemistry of cosmetics and Perfumes CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional group and derivative preparation (cont.) To calculate alkalinity in given sample of pesticide formulations as per BIS specifications. Organic preparation: (i) Oxime formation of cyclohexanone (ii) 2,4 DNP derivative preparation of cyclohexanone (1). Determination of heat capacity of calorimeter using different volumes. (2). Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. Organic preparations: (1) Oxime formation of cyclohexanone (2) 2,4 DNP derivative preparation of cyclohexanone	B.Sc.(P) Life Sciences Sem-VI B.Sc. (H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-II GE II:	DSE-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy SEC-11: PESTICIDE CHEMISTRY PRACTICALS CC-2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
	Assignment	Assignment-1	B. Sc. (P) Life Sciences III	(SEC-10): Chemistry of cosmetics and Perfumes

			year, Semester VI	
	Assignment	Assignment-I	B. Sc. (P) Life Sciences I year, Semester II (B)	CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
March	Theory:	Study of creams (cold, vanishing and shaving cream) nail enamels, antiperspirants and deodorant Haloarenes: their structure, preparation, sandmeyer and gattermann reactions) Nucleophilic aromatic substitution by OH, effect of nitrogroup. Reaction of aryl halides with strong base NaNH₂/NH₃ with benzyne mechanism formation.	B.Sc.(P) Life Sciences Sem-VI B.Sc.(P) Life Sciences Sem-II	(SEC-10): Chemistry of cosmetics and Perfumes CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Practicals:	Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional group and derivative preparation (cont.) Preparation of phenylethylamine thiocarbamate as organic pesticide. Determination of integral enthalpy of solution of salts (KNO₃, NH₄ Cl). Organic preparation: (ii) Semicarbazone of Acetophenone Determination of integral enthalpy of solution of salts (KNO₃, NH₄ Cl). Determination of enthalpy of hydration of salts (CuSO₄) Organic preparation: (i) Semicarbazone of Acetophenone	B.Sc.(P) Life Sciences Sem-VI B.Sc. (H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-II GE II:	DSE-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy SEC-11: PESTICIDE CHEMISTRY PRACTICALS CC-2: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
	Test	Test-I		(SEC): Chemistry of cosmetics and Perfumes

	Test	Test-I	B. Sc. (P) Life Sciences I year, Semester II (B)	CC-2 Course Title: Chemical Energetics, Equilibria and Functional Group Organic
April	Theory:	Essential oils and their importance in the cosmetic industries. Aromatic hydrocarbons Structure and aromatic character of benzene, preparation and reaction of hydrocarbons	B.Sc.(P) Life Sciences Sem-VI B.Sc.(P) Life Sciences Sem-II	(SEC): Chemistry of cosmetics and Perfumes CC-2: Chemical Energetics, Equilibria and Functional Group Organic
	Practicals:	Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional group and their derivative (cont.) Practice exercise. . Organic preparation: Bromination of aniline/phenol (ii)Ammonium chloride-ammonium hydroxide Measurement of the pH of buffer solutions and comparison of the values with theoretical values. 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: Bromination of aniline/phenol	B.Sc.(P) Life Sciences Sem-VI B.Sc. (H) Chemistry Sem-IV B.Sc.(P) Life Sciences Sem-II GE II:	DSE-12 Organometallics, Bioinorganic Chemistry, Polynuclear Hydrocarbons and UV, IR Spectroscopy SEC-11: PESTICIDE CHEMISTRY PRACTICALS CC-2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I GE II: Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
	Tutorials:	NA	NA	NA
May	Theory	REVISIONAND PREVIOUS YEARS QUESTION PAPERS DISCUSSION	B.Sc.(P) Life Sciences Sem-VI	(SEC-10): Chemistry of cosmetics and Perfumes

		REVISIONAND PREVIOUS YEARS QUESTION PAPERS DISCUSSION	B.Sc.(P) Life Sciences Sem- II	CC-2 Chemical Energetics, Equilibria and Functional Group Organic Chemistry-I
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SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

January to April, 2020

Name of the Faculty: Dr.Neeru Kumar

Department: Electronics

Semester: Six

Month		Topics	Course	Paper Code/Name
January	Theory:	Electronic communication: 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, modulation index and frequency spectrum. Generation of AM, Amplitude Demodulation (diode detector), Concept of Double side band suppressed carrier, Single side band suppressed carrier.	B.Sc. Electronics	CC XIII/Communication Electronics
	Practicals:	Sem VI: 1.Study of Amplitude Modulation 2. Study of Amplitude Demodulation 3. Study of Frequency Modulation Sem VI: 1.Transfer function 2. Pole zero graph Sem IV: The Java Environment, The Java Development Kit, The Java Virtual Machine To print an introductory message, Addition, Subtraction, Multiplication, and Division of two numbers using the data types, Evaluate an expression using Integer, real and mixed-mode arithmetic, programs using relational, logical, assignment, Increment, decrement, and conditional operators.		CC XIII/Communication Electronics DSE Control Systems SEC Internet and Java Programming
	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 Demodulation 2. Study of Pulse Amplitude Modulation 3. AM Transmitter/Receiver Sem VI: 1.Simulink, SISO tool, Itiviewer 2 Steady state error evaluation 3. P, PI, PD and PID controller design 4. Automatic PID controller 5.Stability using Routh Hurwitz criteria Sem IV: Swapping two numbers without using third variable, greatest of three numbers, Programs based on Branching, Looping. Classes, New Operator, Dot Operator, Method Declaration and Calling		CC XIII/Communication Electronics DSE Control Systems SEC Internet and Java Programming
	Tutorials:			
	Assignment			
March	Theory:	Pulse Analog Modulation: Channel capacity, Sampling theorem, PAM, PDM, PPM modulation and detection techniques, Multiplexing, TDM and FDM. Pulse Code Modulation: Need for digital transmission, Quantizing, Uniform and Nonuniform	B.Sc. Electronics	CC XIII/Communication Electronics

		Quantization, Quantization Noise, Companding, Coding, Decoding, Regeneration.		
	Practicals:	Sem VI: 1 Study of Pulse Width Modulation 2. Study of Pulse Position Modulation 3. Study of Pulse Code Modulation Sem VI: 1.Root locus plot 2.DC motor speed and position control 3.AC servomotor Sem IV: Constructors, Inheritance, Super, Method Overriding Final, Finalize, Static, Package and Import Statement, Interface and Implements. Programs based on Exception Types, Uncaught and Calling, Nested Try Statements.		CC XIII/Communication Electronics DSE Control Systems SEC Internet and Java Programming
	Tutorials:			
	<u>Mid Term Test</u>			
April	Theory	Digital Carrier Modulation Techniques: Block diagram of digital transmission and reception, Information capacity, Bit Rate, Baud Rate and M-ary coding. Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), Phase Shift Keying (PSK), Binary Phase Shift Keying (BPSK) and Quadrature Phase Shift Keying (QPSK)	B.Sc. Electronics	CC XIII/Communication Electronics

Practicals:	Sem VI: 1.Study of Amplitude Shift Keying 2. Study of Phase Shift Keying, 3. Study of Frequency Shift Keying. Sem VI: 1.Frequency response of Lead and Lag networks 2.Nyquist criterion 3. State space analysis. Sem IV: Programs based on File: Input Stream, Output Stream, and File Stream. Applets-Tag, Order of Applet.		CC XIII/Communication Electronics DSE Control Systems SEC Internet and Java Programming
Tutorials:			

Teaching Plan for the Semester
January - June (2020)
Dr Lalita Josyula / Department of Electronics

Paper : BSc(Hons) / Electronics (IV Sem) (SEC) – Java Programming ---> (2T + 2P)/Week

Subject Month	Theory	Practicals
January	Data types, Arrays, Operators, Flow control: Branching, Looping.	Programs based on Theory taught
February	Classes, New Operator, Dot Operator, Method Declaration and Calling, Constructors, Inheritance, Super Internet: Introduction, Understanding the Internet, Internet Addressing, Hardware Requirements to Connect to the Internet. Assignment for 10 Marks -IA!!	Programs based on Theory taught
March	Method Overriding Final, Finalize, Static, Package and Import Statement, Interface and Implements Exception Handling: Exception Types, Uncaught and Calling, Nested Try Statements, Java Thread Model, and Thread, Runnable, Thread Priorities, Synchronization, Deadlock Written Test for 10 Marks -IA After Semester Break !!	Programs based on Theory taught
April	File: Input Stream, Output Stream, and File Stream. Applets-Tag, Order of Applet Initialization, Repainting, Sizing Graphics- Abstract Window Tool Kit Components	Programs based on Theory taught
May	Final Exams	Submit Project Work ! Final Exams

Paper : Generic Elective (GE-II) / Sem II– Artificial Intelligence ---> (4T + 4P)/Week

Subject Month	Theory	Practicals
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January	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.	Overview of Programming: Structure of a Python Program, Elements of Python Introduction to Python: Python Interpreter, Using Python as calculator, Python shell, Indentation. Atoms, Identifiers and keywords, Literals, Strings, Operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment, Operator, Ternary operator, Bitwise operator, Increment or Decrement operator)
February	Search Algorithms: Random search, Search with closed and open list, Depth first and Breadth first search, Heuristic search, Best first search, A* algorithm, Game Search.	Creating Python Programs: Input and Output Statements, Control statements (Branching, Looping, Conditional Statement, Exit function, Difference between break, continue and pass.), Defining Functions, default arguments, Errors and Exceptions. 1. Write a programme to conduct uninformed and informed search. 2. Write a programme to conduct game search.
March	Probabilistic Reasoning: Probability, conditional probability, Bayes Rule, Bayesian Networks-representation, construction and inference, temporal model, hidden Markov model. Probabilistic Reasoning: Probability, conditional probability, Bayes Rule, Bayesian Networks-representation, construction and inference, temporal model, hidden Markov model.	Iteration and Recursion: Conditional execution, Alternative execution, Nested conditionals, The return statement, Recursion, Stack diagrams for recursive functions, Multiple assignment, The while statement, Tables, Two-dimensional tables Strings and Lists: String as a compound data type, Length, Traversal and the for loop, String slices, String comparison, A find function, Looping and counting, List values, Accessing elements, List length, List membership, Lists and for loops, List operations, List deletion. Cloning lists, Nested lists 3. Write a programme to construct a Bayesian network from given data. 4. Write a programme to infer from the Bayesian network.
April	Reinforcement Learning: Passive reinforcement learning, direct utility estimation, adaptive dynamic programming, temporal difference learning, active reinforcement learning- Q learning.	Object Oriented Programming: Introduction to Classes, Objects and Methods, Standard Libraries. 5. Write a programme to run value and policy iteration in a grid world. 6. Write a programme to do reinforcement learning in a grid world.
May	Final Exams	Submit Project Work ! Final Exams



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2019-2020 (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 II

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.	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. To determine study the variation of Thermo-emf of a Thermocouple with difference of	B.Sc.(Hons) Electronics, Sem II	Core-Course-IV/ Applied Physics Lab

		temperature of its two junctions using a Null Method. And also calibrate the Thermocouple in a specified temperature range. (Different Experiments allotted to different groups)		
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, Differentiator, Voltage to current converter, Current to voltage converter. Comparators: Basic comparator, Level detector, Voltage limiters, Schmitt Trigger.	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 (Different Experiments allotted to different groups)	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 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. (Different Experiments allotted to different groups)	B.Sc.(Hons) Electronics, Sem II	Core-Course-IV/ Applied Physics 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	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications

		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,		
	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 (Different Experiments allotted to different groups) To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 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. (Different Experiments allotted to different groups)	B.Sc.(Hons) Electronics, Sem IV B.Sc.(Hons) Electronics, Sem II	Core-Course-VIII/ Operational Amplifiers and Applications Lab Core-Course-IV/ Applied Physics Lab
	Mid Term Test	As per the syllabus covered		
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 (Different Experiments allotted to different groups)	B.Sc.(Hons) Electronics, Sem IV	Core-Course-VIII/ Operational Amplifiers and Applications Lab
		To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 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. (Different Experiments allotted to different groups)	B.Sc.(Hons) Electronics, Sem II	Core-Course-IV/ Applied Physics Lab



SEMESTER-WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE

Jan-May 2019-2020

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-XII 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 II: Introduction to lab experiments, Study of the I-V Characteristics of Diode – Ordinary and Zener Diode, I-V Characteristics of CE configuration of BJT, I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α , Study of Hall Effect, Solar Cell (Allotted To Different Groups)	B.Sc. (H)	CC-XII Photonics Lab CC III Lab: Semiconductor Devices
FEBRUARY	Theory	Fresnel and Fraunhofer 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-XII 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 II: Study of the I-V Characteristics of Diode – Ordinary and Zener Diode, I-V Characteristics of CE configuration of BJT, I-V Characteristics of the Common Base Configuration of BJT and obtain r_i, r_o, α., Study of Hall Effect, I-V Characteristics of the UJT, I-V Characteristics of the SCR, Solar Cell (Allotted To Different Groups)	B.Sc. (H)	CC-XII Photonics Lab CC III Lab: Semiconductor Devices
	Assignment	Questions based on interference, diffraction and Polarization.	B.Sc. (H)	CC-XII 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-XII Photonics
	Practical	Sem VI: To determine the specific rotation of sugar solution using polarimeter. Characteristics of LEDs and Photodetector and Photodiode. Sem II: Study of the I-V Characteristics of Diode – Ordinary and Zener Diode, I-V Characteristics of CE configuration of BJT, I-V Characteristics of the Common Base Configuration of BJT and obtain r_i, r_o, α., I-V Characteristics of the SCR, Study of Hall Effect, I-V Characteristics of the UJT, Solar Cell, I-V Characteristics of the JFET, MOSFET (Allotted To Different Groups)	B.Sc. (H)	CC-XII Photonics Lab CC III Lab: Semiconductor Devices
	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-XII Photonics
	Practical	Sem VI: Diffraction experiments using a laser. Single slit, double slit diffraction grating and circular aperture Sem II: Study of the I-V Characteristics of CE configuration of BJT ,I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α , I-V Characteristics of the SCR, Study of Hall Effect, I-V Characteristics of the UJT , Solar Cell , I-V Characteristics of the JFET , MOSFET (Allotted To Different Groups)	B.Sc. (H)	CC-XII Photonics Lab CC III Lab: Semiconductor Devices



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session 2019-2020 (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 IV

Month		Topics	Course	Paper Code/ Name
JANUARY	Theory	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. Thermal Properties: Brief Introduction to Laws of Thermodynamics, Concept of Entropy, Concept of Phonons.	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 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. (Different Experiments allotted to different groups) Study of Amplitude Modulation Study of Amplitude Demodulation Study of Frequency Modulation	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
			B.Sc.(Hons) Electronics, Semester VI	Core-Course-XIII/ Communication Electronics
FEBRUARY	Theory	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	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics

		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.		
	Practical	To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 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. (Different Experiments allotted to different groups) Study of Frequency Demodulation Study of Pulse Amplitude Modulation AM Transmitter/Receiver	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab
		Study of Frequency Demodulation Study of Pulse Amplitude Modulation AM Transmitter/Receiver	B.Sc.(Hons) Electronics, Semester VI	Core-Course-XIII/ Communication Electronics
	Assignment	As per the syllabus covered		
MARCH	Theory	Classification of Magnetic Materials, Origin of Magnetic moment, 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. Quantum Physics: Inadequacies of Classical physics. Compton's effect, Photo-electric Effect, Wave-particle duality,	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics
	Practical	To determine Young's modulus of a wire by optical lever method. 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. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. To determine the value of Boltzmann Constant by studying forward characteristics of diode. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. To determine e/m of electron by Bar Magnet	B.Sc.(Hons) Electronics, Semester II	Core-Course-IV/ Applied Physics Lab

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IQAC, SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN

Jan-May 2020

Name of the Faculty: Shubhra Gupta
Department: Electronics

Semester: Theory : BSc(Hons) Electronics Semester II
BSc(Hons) Electronics Semester VI

Practicals : BSc(Hons) Electronics Semester II
BSc(Hons) Electronics Semester IV

Month		Topics	Course	Paper Code/Name
JANUARY	Theory:	SEM II : Unit 1 : 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. Unit 2 : P-N Junction Diode: Formation of Depletion Layer	Bsc (Hons) Electronics	CC III : Semiconductor Devices
		SEM VI : Unit 1 : Introduction to Control Systems: Open loop and Closed loop control systems, block diagram representation & signal flow graph, Reduction Technique, Mason's Gain Formula. Effect of feedback on control systems.	Bsc (Hons) Electronics	DSE 3 : Control System
	Practicals:	SEM II : Introduction to lab experiments , Study of the I-V Characteristics of Diode – Ordinary and Zener Diode, I-V Characteristics of CE configuration of BJT , I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α , Study of Hall Effect , Solar Cell (Allotted To Different Groups) SEM IV : 1. Generation of Signals: continuous time 2. Generation of Signals: discrete time 3. Time shifting and time scaling of signals.	Bsc (Hons) Electronics	CC III Lab: Semiconductor Devices CC IX Lab: Signals and Systems Lab
	Tutorials:			

FEBRUARY	Theory:	SEM II : Unit 2 :Space Charge at a Junction, Derivation of Electrostatic Potential Difference at Thermal Equilibrium, Depletion Width and Depletion Capacitance of an Abrupt Junction. Concept of Linearly Graded Junction, Derivation of Diode Equation and I-V Characteristics. Zener and Avalanche Junction Breakdown Mechanism.Tunnel diode, varactor diode, solar cell: circuit symbol, characteristics, applications Unit 3 : Bipolar Junction Transistors (BJT): PNP and NPN Transistors, Basic Transistor Action, Emitter Efficiency , Base Transport Factor, Current Gain	Bsc (Hons) Electronics	CC III : Semiconductor Devices
		SEM VI : Unit 1(contd) :Mathematical modeling of physical systems (Electrical, Mechanical and Thermal),Derivation of transfer function, Armature controlled and field controlled DC servomotors Unit 4 : State Space Analysis: Definitions of state, state variables, state space representation of systems,	Bsc (Hons) Electronics	DSE 3 :Control Systems
	Practicals:	SEM II : Study of the I-V Characteristics of Diode – Ordinary and Zener Diode,I-V Characteristics of CE configuration of BJT ,I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α , Study of Hall Effect, I-V Characteristics of the UJT, I-V Characteristics of the SCR , Solar Cell (Alloted To Different Groups) SEM IV : 1. Convolution 2. Solution of Difference equation. 3. Step and impulse response	Bsc (Hons) Electronics	CC III Lab: Semiconductor Devices CC IX Lab: Signals and Systems Lab
	Tutorials:			
	Assignment	SEM II : Unit 1 SEM VI : Unit 4	Bsc (Hons) Electronics	CC III : Semiconductor Devices DSE 3 :Control Systems
MARCH	Theory:	SEM II : Unit 4 : Power Devices: UJT, Basic construction and working, Equivalent circuit, intrinsic Standoff Ratio, Characteristics and relaxation oscillator-expression. SCR, Construction,Working and Characteristics, Triac, Diac, IGBT Field Effect Transistors: JFET, Construction, Idea of Channel Formation, Pinch-Off and Saturation Voltage,Current-Voltage Output Characteristics.	Bsc (Hons) Electronics	CC III : Semiconductor Devices
		SEM VI : Unit 4 : Solution of time invariant Unit : 3 Logarithmic plots (Bode Plots), gain and phase margins	Bsc (Hons) Electronics	DSE 3 :Control Systems

	Practicals:	SEM II : Study of the I-V Characteristics of Diode – Ordinary and Zener Diode, I-V Characteristics of CE configuration of BJT ,I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α , I-V Characteristics of the SCR ,Study of Hall Effect, I-V Characteristics of the UJT , Solar Cell , I-V Characteristics of the JFET , MOSFET (Allotted To Different Groups)	Bsc (Hons) Electronics	CC III Lab: Semiconductor Devices
		SEM IV : Laplace transform and Fourier transform of continuous time signals, generation of Fourier series through Simulink		CC IX Lab: Signals and Systems Lab
	Tutorials:			
	Mid Term Test	SEM II : Unit 1 and Unit 2 SEM VI : Unit 1 and Unit 2	Bsc (Hons) Electronics	CC III : Semiconductor Devices DSE 3 :Control Systems
	Theory	SEM II : Unit 4: MOSFET, types of MOSFETs, Circuit symbols, Working and Characteristic curves of Depletion type MOSFET (both N channel and P Channel) Enhancement type MOSFET (both N channel and P channel). Complimentary MOS (CMOS)., MESFET, Circuit symbols, Basic constructional features, Operation and Applications. Unit 3: Energy Band Diagram of Transistor in Thermal Equilibrium, Quantitative Analysis of Static Characteristics (Minority Carrier Distribution and Terminal Currents), Base-Width Modulation, Modes of operation, Input and Output Characteristics of CB, CE and CC Configurations. Metal Semiconductor Junctions: Ohmic and Rectifying Contacts.	Bsc (Hons) Electronics	CC III : Semiconductor Devices
		SEM VI : Unit 4 Concept of compensation, Lag, Lead and Lag-Lead networks. homogeneous state equation, state transition matrix and its properties.	Bsc (Hons) Electronics	DSE 3 :Control Systems
	Practicals:	SEM II : Study of the I-V Characteristics of CE configuration of BJT ,I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α , I-V Characteristics of the SCR, Study of Hall Effect, I-V Characteristics of the UJT , Solar Cell , I-V Characteristics of the JFET , MOSFET (Allotted To Different Groups) SEM IV : 1. Using Simulink for designing systems through transfer function. 2. Design of Low pass, high pass, band pass filters and studying the frequency response.	Bsc (Hons) Electronics	CC III Lab: Semiconductor Devices CC IX Lab: Signals and Systems Lab
	Tutorials:			

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IQAC, SRI VENKATESWARA COLLEGE

SEMESTER WISE TEACHING PLAN

Jan-May 2020

Name of the Faculty: Dr. Rakhi Narang
Department: Electronics

Semester: II/IV/VI

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. Sem VI: Introduction to control systems: Open loop and Closed loop control systems, Time domain performance criteria, transient response of first, second & higher order systems, steady state errors and static error constants, Performance indices.	B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems DSE: Control Systems
	Practicals:	Sem IV: 1. Generation of Signals: continuous time 2. Generation of Signals: discrete time 3. Time shifting and time scaling of signals. Sem VI: Transfer function, Pole zero graph Sem II: 1. To determine Young's modulus of a wire by optical lever method. 2. To determine the modulus of rigidity of a wire by Maxwell's needle. 3. To determine the elastic constants of a wire by Searle's method. 4. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. 5. To determine the value of Boltzmann Constant by studying forward characteristics of diode. 6. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. 7. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 8. 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. (Different Experiments allotted to different groups)	B.Sc. Electronics B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems Lab DSE: Control Systems Lab CC-IV: Applied Physics 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 Sem VI: Time domain performance criteria, transient response of first, second & higher order systems. Basic Control Actions: Proportional, integral and Derivative controls, PID. Concept of Stability: Asymptotic stability and conditional stability, Routh – Hurwitz criterion, relative stability analysis.	B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems DSE: Control Systems
	Practicals:	Sem IV: 1. Convolution 2. Solution of Difference equation. 3. Step and impulse response Sem VI: Simulink, siso tool, ltiviewer, steady state error evaluation, P, PI, PD and PID controller design, Automatic PID controller, stability using Routh Hurwitz criteria. Sem II: 1. To determine Young's modulus of a wire by optical lever method. 2. To determine the modulus of rigidity of a wire by Maxwell's needle. 3. To determine the elastic constants of a wire by Searle's method. 4. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. 5. To determine the value of Boltzmann Constant by studying forward characteristics of diode. 6. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. 7. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 8. 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. (Different Experiments allotted to different groups)	B.Sc. Electronics B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems Lab DSE: Control Systems Lab CC-IV: Applied Physics Lab
	Assignment	Sem IV: Assignment based on Unit I and II Sem VI: Assignment based on applications of Control systems in real time systems.	B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems DSE: Control Systems
	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. Continuous-Time periodic signals, Convergence of the Fourier series, Properties of continuous-Time Fourier series, Discrete-Time periodic signals Sem VI: Root Locus plots and their applications. Correlation between time and frequency response, Polar and	B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems DSE: Control Systems

		inverse polar plots		
	Practicals:	Sem IV: Laplace transform and Fourier transform of continuous time signals, generation of Fourier series through Simulink Sem VI: Root Locus plot, DC motor speed and position control, AC servomotor Sem II: 1. To determine Young's modulus of a wire by optical lever method. 2. To determine the modulus of rigidity of a wire by Maxwell's needle. 3. To determine the elastic constants of a wire by Searle's method. 4. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. 5. To determine the value of Boltzmann Constant by studying forward characteristics of diode. 6. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. 7. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 8. 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. (Different Experiments allotted to different groups)	B.Sc. Electronics B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems Lab DSE: Control Systems Lab CC-IV: Applied Physics Lab
	Mid Term Test	Sem IV: Based on Unit 1 and 2 Sem VI: Based on Unit 1 and		
April	Theory	Sem IV: Properties of Discrete-Time Fourier series, Frequency-Selective filters, Simple RC highpass and lowpass filters 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. Sem VI: frequency domain specifications and Nyquist stability criterion, relative stability using Nyquist criterion	B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems DSE: Control Systems
	Practicals:	Sem IV: 1. Using Simulink for designing systems through transfer function. 2. Design of Low pass, high pass, band pass filters and studying the frequency response. Sem VI: Frequency response of Lead and Lag networks , nyquist criterion , State space analysis. Sem II: 1. To determine Young's modulus of a wire by optical lever method. 2. To determine the modulus of rigidity of a wire by	B.Sc. Electronics B.Sc. Electronics B.Sc. Electronics	Core course-IX Signals and Systems Lab DSE: Control Systems Lab CC-IV: Applied Physics Lab

	Maxwell's needle. 3. To determine the elastic constants of a wire by Searle's method. 4. To measure the resistivity of a Ge crystal with temperature by Four-Probe method from room temperature to 200 °C. 5. To determine the value of Boltzmann Constant by studying forward characteristics of diode. 6. To determine the value of Planck's constant by using LEDs of at least 4 different wavelengths. 7. To determine e/m of electron by Bar Magnet or by Magnetic Focusing. 8. 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. (Different Experiments allotted to different groups)		
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SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Session (Jan-April'2020), Even Semester

Name of the Faculty : **Dr. Neha Verma**

Department : **Electronics**

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

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

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	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.	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines
	Practicals	Study of characteristics of single phase induction motor. Study of characteristics of three phase induction motor. The Java Environment, The Java Development Kit, The Java Virtual Machine To print an introductory message, Addition, Subtraction, Multiplication, and Division of two numbers using the data types, Evaluate an expression using Integer, real and mixed-mode arithmetic, programs using relational, logical, assignment, Increment, decrement, and conditional operators.	B.Sc.(Hons) Electronics, Sem VI B.Sc.(Hons) Electronics, Sem IV	DSE/Electrical Machines Lab SEC/Internet and Java Programming
FEBRUARY	Theory	Polyphase Circuits: Polyphase circuits, three phase transformers, delta-delta and delta –Y Connection 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.(Hons) Electronics, Sem VI	DSE/Electrical Machines
	Practicals	Study of control of DC motor using SCR. Study of characteristics of DC Series motor.	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines Lab

		Swapping two numbers without using third variable, greatest of three numbers, Programs based on Branching, Looping. Classes, New Operator, Dot Operator, Method Declaration and Calling	B.Sc.(Hons) Electronics, Sem IV	SEC/Internet and Java Programming
MARCH	Theory	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 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	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines
	Practicals	Study of characteristics of DC Shunt motor. Study of Open Circuit Test on single phase transformer. Constructors, Inheritance, Super, Method Overriding Final, Finalize, Static, Package and Import Statement, Interface and Implements. Programs based on Exception Types, Uncaught and Calling, Nested Try Statements.	B.Sc.(Hons) Electronics, Sem VI B.Sc.(Hons) Electronics, Sem IV	DSE/Electrical Machines Lab SEC/Internet and Java Programming
	Assignment	Assignment: Questions based on topics covered.	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines
	Mid Term Test	Test: As per the covered topics.	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines
APRIL	Theory	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. 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	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines
	Practicals	Study of Short Circuit Test on single phase transformer.	B.Sc.(Hons) Electronics, Sem VI	DSE/Electrical Machines Lab

		Programs based on File: Input Stream, Output Stream, and File Stream. Applets-Tag, Order of Applet.	B.Sc.(Hons) Electronics, Sem IV	SEC/Internet and Java Programming
	Tutorials	NA	NA	NA



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

Name of the Faculty: Dr. Anita Verma

Department: Zoology

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Syllabus overview. Scope of studying the course. Unit 1 Movements and Bulk Transport: Introduction to musculo skeletal system; Terrestrial, aquatic and aerial locomotion; Locomotory cost.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Introduction to Physiology. Scope of Studying the subject 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	Syllabus overview, general instructions and maintenance of lab record. Effect of isotonic hypotonic hypertonic salines on erythrocytes.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Estimation of haemoglobin using Sahli's haemoglobinometer. Enumeration of white blood cells using haemocytometer. Enumeration of red blood cells using haemocytometer.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
		Temporary mount of neuron, blood film preparation, ABO blood group, Preparation of haemin and haemochromogen crystals.	GE II Zoology, Semester-IV	GE II: Human Physiology

FEBRUARY	Theory:	Unit 2 Gas exchange in organism; Generation and utilization of energy: Respiratory organs in aquatic and terrestrial systems; Physiology of aquatic breathing and aerial breathing; Feeding patterns, digestive tract systems.	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 RBC using haemocytometer. Continuous evaluation based on performance and record maintenance.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
		Enumeration of white blood cells using haemocytometer (repeat). Enumeration of red blood cells using haemocytometer (repeat). Preparation of haemin and haemochromogen crystals. Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum, liver, trachea, lung, kidney.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
		Estimation of haemoglobin using Sahli's haemoglobinometer, Examination of sections of mammalian stomach, lung, kidney, pancreas, ovary, testis, thyroid.	GE II Zoology, Semester-IV	GE II: Human Physiology

MARCH	Theory: Unit 2 Gas exchange in organism; Generation and utilization of energy: Digestion of food in different animals. Unit 4 Integrative Physiology: An overview of neuronal structure and function; Sensory physiology – mechanoreceptors and chemoreceptors. Unit 2: Physiology of Respiration: Transport of oxygen and carbon dioxide in blood; Respiratory pigments, Dissociation curves and the factors influencing it.	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)
	Practicals: Enumeration of total count of WBC using haemocytometer. Study of lung volumes and capacities by spirometer. Recording of blood pressure using a sphygmomanometer. Recording of blood pressure, Repeat of histology sections.	B.Sc. (Hons) Biological Science, Semester-IV B.Sc. (Hons) Zoology, Semester-IV GE II Zoology, Semester-IV	Systems Physiology (BS C-8) Animal Physiology: Life Sustaining Systems (CC IX) GE II: Human Physiology
	<u>Test</u> Mid-term Test: Test questions in DU exam pattern of covered topics. Mid-term Test: Test questions in DU exam pattern of covered topics.	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)
APRIL	Theory: Unit 4 Integrative Physiology: Thermoreceptors, photoreceptors and electroreceptors; Endocrine systems in animals and their physiological effects. Unit 2: Physiology of Respiration: Carbon monoxide poisoning; Control of respiration.	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)

Practicals:	Revision exercises and test, viva for practical exams.	B.Sc. (Hons) Biological Science, Semester-IV	Systems Physiology (BS C-8)
	Revision and mock test.	B.Sc. (Hons) Zoology, Semester-IV	Animal Physiology: Life Sustaining Systems (CC IX)
	Revision exercises and test, viva for practical exams.	GE II Zoology, Semester-IV	GE II: Human Physiology



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

Name of the Faculty: Dr. Vartika Mathur

Department: Zoology

Semester: II/IV/VI

- **Theory & Practical:**
B.Sc. (H) Zoology Sem VI (Wildlife Conservation and management)
BSc (H) Biological Sciences Sem VI (Animal behavior & chronobiology)
- **Practical: B.Sc. (H) Zoology Sem II (Non-chordata-II)**

Month		Topics	Course	Paper Code/Name
January	Theory	Introduction , Values and ethics of wildlife conservation; importance of conservation, Faecal analysis of ungulates and carnivores: Faecal samples, slide preparation, Hair identification, Pug marks and census method.	B.Sc. (Hons.) Zoology Sem VI (TZh)	Wildlife Conservation and management DSE-XI
		Introduction, Origin and history of Ethology; Reflexes: Types of reflexes, reflex path, characteristics of reflexes (latency, after discharge, summation, fatigue, inhibition) and its comparison with complex behavior. Orientation: Primary and secondary orientation; kinesis-orthokinesis, klinokinesis; taxis-tropotaxis and klinotaxis, menotaxis (light compass orientation).	BSc (H) Biological Sciences Sem V	Animal behavior & chronobiology (DSE III)
	Practicals	Identification and Study of any five endangered mammalian fauna, avian fauna, herpetofauna; Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of Cameras and lenses)	B.Sc. (Hons.) Zoology Sem VI (TZh)	Wildlife Conservation and management DSE-XI
		Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoof marks, scats, pellet groups, nest, antlers etc.		
		Annelids - <i>Aphrodite</i> , <i>Nereis</i> , <i>Heteronereis</i> , <i>Sabella</i> , <i>Serpula</i> , <i>Chaetopterus</i> , <i>Pheretima</i> , <i>Hirudinaria</i>	B.Sc. (Hons.) Zoology Sem II FZH	Non-chordata-II CC-III
		T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm		

		Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)
February	Theory	Setting back succession; Grazing logging; Mechanical treatment; Advancing the successional process; Cover construction; Preservation of general genetic diversity.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Insects' society; Honey bee: Society organization, polyethism, foraging, round dance, waggle dance, Experiments to prove distance and direction component of dance, earning ability in honey bee, formation of new hive/queen	BSc (H) Biological Sciences Sem V	Animal behavior & chronobiology (DSE III)
	Practicals:	Demonstration of different field techniques for flora and fauna PCQ, Ten tree method, Circular, Square & rectangular plots, Parker's 2 Step and other methods for ground cover assessment, Tree canopy cover assessment, Shrub cover assessment.	BSc (H) Zoology Sem VI	Wildlife Conservation and management DSE-XI
		Non-chordata II Molluscs - <i>Chiton</i> , <i>Dentalium</i> , <i>Pila</i> , <i>Doris</i> , <i>Helix</i> , <i>Unio</i> , <i>Ostrea</i> , <i>Pinctada</i> , <i>Sepia</i> , <i>Octopus</i> , <i>Nautilus</i> Echinodermates - <i>Pentaceros</i> / <i>Asterias</i> , <i>Ophiura</i> , <i>Clypeaster</i> , <i>Echinus</i> , <i>Cucumaria</i> and <i>Antedon</i>	B.Sc. (Hons.) Zoology Sem II FZH	Non-chordata-II CC-III
		Types of Reference Styles, Learning usage of Endnote, Exercises related to Plagiarism	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)
March	Theory	National parks & sanctuaries, Community reserve; Important features of protected areas in India; Tiger conservation - Tiger reserves in India; Management challenges in Tiger reserve.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Learning: Associative learning, classical and operant conditioning, Habituation, Imprinting	BSc (H) Biological Sciences Sem V	Animal behavior & chronobiology (DSE III)
	Practical	- Field study to Corbett National Park - Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences)	BSc (H) Zoology Sem VI	Wildlife Conservation and management DSE-XI
		Non-chordata II Arthropods - <i>Limulus</i> , <i>Palamnaeus</i> , <i>Palaemon</i> , <i>Daphnia</i> , <i>Balanus</i> , <i>Sacculina</i> , <i>Cancer</i> , <i>Eupagurus</i> , <i>Scolopendra</i> , <i>Julus</i> , <i>Bombyx</i> , <i>Periplaneta</i> , termites and honey bees Onychophora - <i>Peripatus</i>	B.Sc. (Hons.) Zoology Sem II FZH	Non-chordata-II CC-III
		Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)

	<u>Assignment</u>	WILD LIFE CONSERVATION AND MANAGEMENT Concept of climax persistence/ Ecology of perturbation.	B.Sc. (Hons.) Zoology Sem VI TZH	Wildlife Conservation and management DSE-XI
		Animal behavior and chronobiology Topic: Animal behavior related concepts	Biological Sciences Sem VI (TBS)	Animal behavior & chronobiology (DSE III)
	<u>Mid Term Test</u>	Animal behavior and chronobiology Test will include all the topics covered	Biological Sciences Sem VI (TBS)	Animal behavior & chronobiology (DSE III)
		Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem VI TZH	Wildlife Conservation and management DSE-XI
APRIL	Theory:	Revision	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Revision	BSc (H) Biological Sciences Sem V	Animal behavior & chronobiology (DSE III)
	Practicals:	Wildlife training: Educational tour to Jim Corbett National Park - Revision/ mock exam	BSc (H) Zoology Sem VI	Wildlife Conservation and management DSE-XI
		- Revision/ mock exam - Submission of project report	B.Sc. (Hons.) Zoology Sem II FZH	Non-chordata-II CC-III
		- Revision/ mock exam - Submission of project report	B.Sc. (H) Sem IV SZH	Research Methodology (SEC)



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Even Semester 2020 (Jan-April)

Name of the Faculty: Dr. Om Prakash

Department: Zoology

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	Theory	Cell Biology Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions	B.Sc. (Hons.) Zoology Sem II TZH	CC IV
		Biotechnology Southern blotting	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
	Practical	Cell Biology 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
		Immunology To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc Life Sciences Sem VI (Two batches)	DSE Zoology 4
February	Theory	Cell Biology Unit 5: Cytoskeleton Structure and Functions: Microtubules, Microfilaments and Intermediate filaments	B.Sc. (Hons.) Zoology Sem II TZH	CC IV
		Biotechnology Northern blotting Western blotting	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
	Practicals:	Cell Biology 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 TZH	CC IV
		Immunology Cell counting and viability of splenocytes. ELISA Immunoelectrophoresis	B.Sc Life Sciences Sem VI (Two batches)	DSE Zoology 4
March	Theory	Cell Biology Unit 7: Cell Division 8 Mitosis, Meiosis, Cell cycle and its regulation Unit 8: Cell Signaling 4 GPCR and Role of second messenger (cAMP)	B.Sc. (Hons.) Zoology Sem II TZH	CC IV

		Biotechnology Polymerase Chain Reaction	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
	Practical	Cell Biology Preparation of permanent slide to demonstrate: i DNA by Feulgen reaction ii Mucopolysaccharides by PAS reaction	B.Sc. (Hons.) Zoology Sem II TZH	CC IV
		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 Cell Biology From all units taught	B.Sc. Hons Zoology Sem II	CC IV
		Test of Animal Biotechnology From all units taught	B.Sc. Hons Zoology Sem VI	DSE I
APRIL	Theory:	Cell Biology Unit 6: Nucleus Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleolus Chromatin: Euchromatin and Hetrochromatin and packaging (nucleosome) Unit 4: Mitochondria and Peroxisomes Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain, Chemi-osmotic hypothesis	B.Sc. (Hons.) Zoology Sem II TZH	CC IV
		Biotechnology DNA Finger Printing DNA micro array	B.Sc. (Hons.) Zoology Sem VI TZH	DSE I
	Practicals:	Cell Biology 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	CC IV
		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 2020 (Jan-April)

Name of the Faculty: Dr. Ajaib Singh

Department: Zoology

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
January	Theory	Unit I: Integumentary system - structures and function of integument, derivatives of integumentary glands.	B.Sc Life Sciences Sem II	LS Core II/ Comparative Anatomy and Development Biology
		Unit 2: Carbohydrate metabolism: Glycolysis, citric acid cycle, HMP pathway, GNG, glycogenesis, glycogenolysis.	B.Sc Zoology Sem IV	CC X/ Biochemistry of metabolic processes
	Practical	Cloning vectors: plasmids, cosmids, phagemids, phage lambda, M13, BAC, YAC, MAC and expression vectors.	B.Sc Zoology Sem VI	DSE / Animal Biotechnology
		1. Osteology: a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle/tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal	B.Sc Life Sciences Sem II	Comparative Anatomy and Development Biology
		To perform Ouchterlony double immunodiffusion assay. ABO blood group determination.	B.Sc Life Sciences Sem VI (Two batches)	Immunology
February	Theory	Unit 2: Skeletal system- overview, jaw suspension, visceral arches	B.Sc Life Sciences Sem II	LS Core II/ Comparative Anatomy and Development Biology
		Unit 5: Oxidative phosphorylation. Redox system, ETC, inhibitors and uncouplers.	B.Sc Zoology Sem IV	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 Sem VI	DSE/ Animal biotechnology
	Practicals:	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 Sem II	Comparative Anatomy and Development Biology
		Cell counting and viability of splenocytes. ELISA	B.Sc Life Sciences Sem VI (Two batches)	Immunology
		Immunoelectrophoresis		

March	Theory	Unit 7: Nervous system. Comparative account of brain.	B.Sc Life Sciences Sem II	LS Core II/ Comparative Anatomy and Development Biology
		Unit 1: Catabolism vs anabolism. Compartmentalization of metabolic pathways, shuttle systems and transporters.	B.Sc Zoology Sem IV	CC X/ Biochemistry of metabolic processes
		Animal biotechnology Recombinant DNA in medicine, recombinant insulin and human growth hormone. Gene therapy.	B.Sc Zoology Sem VI	DSE
	Practical	Study of the different types of placenta-histological sections through permanent slides or photomicrograph	B.Sc Life Sciences Sem II	Comparative Anatomy and Development Biology
		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 B.sc life science II (Comparative Anatomy and dev bio).and Assignments		
		Test of B.Sc Zoology Sem IV (Biochemistry of metabolic processes) and Assignments		
		Test of B.Sc Zoology Sem VI (Animal. Biotechnology) and Assignments		
APRIL	Theory:	Unit 8: Sense organs. Types of visual receptor in man.	B.Sc Life Sciences Sem II	Core Comparative Anatomy Development Biology II/
		Unit 1: ATP as energy currency, coupled reactions, use of reducing equivalents and cofactors. Intermediary metabolism.	B.Sc Zoology Sem IV	CC X/ Biochemistry of metabolic processes
		Animal cell culture.	B.Sc Zoology Sem VI	DSE/ Animal biotechnology
	Practicals:	Temporary mount of sperm (frog/rat) *(To be approved by Animal Ethical Committee of the college) 5. Study visit to a IVF centre and submission of report.	B.Sc Life Sciences Sem II	Comparative Anatomy and Development Biology
		Revision/ mock exam		
		Revision Mock tests.	B.Sc Life Sciences Sem VI (Two batches)	Immunology



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January -May 2020, (Session 2019-20)

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 (Animal 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 (Animal 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 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 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)
		Animal 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-II (Animal Physiology: Controlling 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 Law by chi square analysis method	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Animal Physiology:Life Sustaining Systems - Estimation of haemoglobin using Sahli's haemoglobinometer - Enumeration of white blood cells using haemocytometer - Enumeration of red blood cells using haemocytometer	BSc (H) Zoology Semester IV	CC-II (Animal Physiology: Controlling Life Sustaining Systems)
FEBRUARY	Theory:	Concepts Of Evolutionary Biology Phyletic Gradualism and Punctuated Equilibrium (Quantum Evolution), Basis of speciation – Isolating mechanisms Periodic extinctions , Mass-scale extinctions – Causes and events	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)
		Animal Physiology:Life Sustaining Systems - Hormonal control of secretion of enzymes in Gastrointestinal tract. - Components of blood and their functions; Structure and functions of haemoglobin, Haemostasis	BSc (H) Zoology Semester IV	CC-II (Animal Physiology: Controlling 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)
		Animal Physiology:Life Sustaining Systems • Enumeration of white blood cells using haemocytometer (repeat) • Enumeration of red blood cells using haemocytometer (repeat) • Preparation of haemin and haemochromogen crystals • Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum liver, trachea, lung, kidney	BSc (H) Zoology Semester IV	CC-II (Animal Physiology: Controlling Life Sustaining Systems)
MARCH	Theory:	Concepts Of Evolutionary Biology Chemogeny – An overview of pre-biotic conditions and events; experimental proofs to abiotic origin of micro- and macro-molecules. Current concept of chemogeny – RNA first hypothesis. Biogeny – Cellular evolution based on proto-cell models (coacervates and proteinoid micro-spheres). Origin of photosynthesis – Evolution of oxygen and ozone buildup. Endosymbiotic theory – Evolution of Eukaryotes from Prokaryotes Phylogenetic – a) Fossil based – Phylogeny of horse as a model. b) Molecule based – Protein model (Cytochrome C); gene model (Globin gene family) Adaptive radiation	B.Sc. H . Biological Science Sem VI	BS-C14 (Concepts Of Evolutionary Biology)
		Evolutionary Biology Life's Beginnings: Chemogeny, RNA world, Biogeny, Origin of photosynthesis, Evolution of eukaryotes evolution of horse Adaptive radiation / macroevolution (exemplified by Galapagos finches)	B.Sc. (H) Zoology Sem VI	CC-14 (Evolutionary Biology)
		Animal Physiology:Life Sustaining Systems Renal Physiology Structure of kidney and its functional unit	BSc (H) Zoology Semester IV	CC-II (Animal Physiology: Controlling Life Sustaining Systems)
	Practicals:	Concepts Of Evolutionary Biology • <i>Connecting links/transitional forms -</i> • Living fossils • Sampling of human height, weight and BMI for continuous variation • Sampling for discrete characteristics (dominant vs recessive) for discontinuous variations	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)
Animal Physiology:Life Sustaining Systems Revision and mock practicals	BSc (H) Zoology Semester IV	CC-II (Animal Physiology: Controlling Life Sustaining Systems)



SEMESTER WISE TEACHING PLAN (2019-2020)
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
		Endomembrane System: Structure and Functions: Endoplasmic Reticulum	B.Sc. (H.) Zoology Semester II	Cell Biology
		Basic properties of antigens, B and T cell epitopes, haptens and adjuvants Structure of antibodies,	B.Sc. (H.) Life Sciences Semester VI	Immunology
		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. <i>With continuous evaluation</i> 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
FEBRU		Agrobacterium mediated	B.Sc. (H)	Animal

ARY	Theory	transformation and other methods of plant transformation	Zoology Semester VI	Biotechnology
		Endomembrane System: Structure and Functions: Golgi Apparatus, Lysosomes	B.Sc. (H.) Zoology Semester II	Cell Biology
		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 VI	Immunology
		Classes and function of antibodies, monoclonal antibodies, antigen antibody interactions as tools for research and diagnosis	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 <i>With continuous evaluation</i> 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
		Various models of plasma membrane structure Transport across membranes: Active and Passive transport, Facilitated transport	B.Sc. (H.) Zoology Semester II	Cell Biology
		Structure and functions of MHC, exogenous and	B.Sc. (H.) Life Sciences	Immunology

		endogenous pathways of antigen presentation and processing, Basic properties and functions of cytokines,	Semester VI	
		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 Study of Linkage, recombination, gene mapping using the data. <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. (H.) Life Sciences Semester IV Batch I & II)	Genetics and Evolutionary Biology
		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
		Cell junctions: Tight junctions, Desmosomes, Gap junctions	B.Sc. (H.) Zoology Semester II	Cell Biology
		General introduction to vaccines, Various types of vaccines	B.Sc. (H.) Life Sciences Semester VI	Immunology
		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	B.Sc. (H) Zoology Semester VI	Evolutionary Biology

		100 humans in relation to their age and sex. Mock test		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Academic Planner: Even Semester 2020 (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
		COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES Unit 9: Scope and History of Developmental Biology 5 hrs Concepts of Epigenesis, Preformation, Specification, Determination, Differentiation, Morphogenesis, Embryonic induction	B.Sc. Life sciences sem II (FLS)	LS Core II
	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 AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES 1. Osteology: a) Disarticulated skeleton of fowl and rabbit 28 b) Carapace and plastron of turtle/tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal	B.Sc. Life sciences sem II (FLS)	LS Core II
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
		COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES Unit 10: Early Embryonic Development 12 hrs Gametogenesis: Spermatogenesis and Oogenesis in mammals; Fertilization: External (amphibians), Internal (mammals), blocking mechanisms to Polyspermy; Types and Patterns of cleavage;	B.Sc. Life sciences sem II (FLS)	LS Core II

	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 and developmental biology 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 sem II (FLS)	LS Core II
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
		Comparative anatomy and developmental biology Unit 10 cont.. Types of morphogenetic movements; Early development of frog and human (up to formation of gastrula); Fate maps, Fate of germ layers	B.Sc. (Life Sciences.) Zoology Sem II FLS	LS Core II
	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 and developmental biology Study of the different types of placenta- histological sections through permanent slides or photomicrograph.	B.Sc. Life sciences sem II (FLS)	LS core 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 II (FLS)	

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<u>Mid Term Test</u>	Topics covered before mid semester break and from assingnment		
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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
		Comparative anatomy and developmental biology Unit 11: Late Embryonic Development 7 hrs Metamorphic events in life cycle of frog and its hormonal regulation. Implantation of embryo in human; Formation, types and functions of placenta in mammals. Unit 12: Applied Aspects of Developmental Biology 6 hrs Stem cells, Cloning, IVF	B.Sc. Life sciences sem II (FLS)	LS Core II
	Practicals:	DEVELOPMENTAL BIOLOGY Study of different sections of placenta (photomicrograph/ 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 and Developmental Biology Temporary mount of sperm (frog/rat) *(To be approved by Animal Ethical Committee of the college) 5. Study visit to a IVF centre and submission of report.	B.Sc. Life sciences Sem II (FLS)	LS Core II
		Revision/ mock exam		



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
JAN- APRIL, 2020

Name of the Faculty: Dr. Riyaz Bakshi

Department: Zoology

Semester: II /IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory:	Unit2: ORIGIN AND CLASSIFICATION OF LAKES. LAKE AS AN ECOSYSTEM	B.Sc. Sem IV	GE IV: Aquatic biology
		Unit2: DIGESTIVE SYSTEM	B.Sc. Sem II	GE II: Human Physiology
	Practicals:	Unit4. Cardiovascular systems: structure of heart	B.Sc Zoology 2 nd year Sem IV	Physiology: Life sustaining systems
		COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES Osteology: a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle /tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal	B.Sc. Life sciences sem II (FLS) BATCH-III	LS Core II
		COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES Osteology: a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle /tortoise c) Mammalian skulls: one herbivorous and one carnivorous animal	B.Sc. Life sciences sem II (FLS) BATCH-I	LS Core II

	Tutorials:	UNIT 1. BLOOD PRESSURE	BSc. Life Science Sem-VI	SEC: Public health and hygiene
FEB.	Theory:	Unit.2: Thermal stratification, dissolved solids	B.Sc. Sem IV	GE IV: Aquatic biology
		Unit. 3: CULATORY SYSTEM UNIT 4.RESPIRATORY SYSTEM	B.Sc. Sem II	GE II: Human Physiology
		Unit 3: Cardiovascular systems CARDIAC IMPULSE, ECG	B.Sc Zoology 2 nd year Sem IV	Physiology: Life sustaining systems
	Practicals:	COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES	B.Sc. Life sciences sem II (FLS) BATCH-III	LS Core II
		Unit 10: Early Embryonic Development 12 hrs Gametogenesis: Spermatogenesis and Oogenesis in mammals; Fertilization: External (amphibians), Internal (mammals), blocking mechanisms to Polyspermy; Types and Patterns of cleavage;	B.Sc. Life sciences sem II (FLS) BATCH-I	LS Core II

	Tutorials:	UNIT 2. BODY MASS INDEX	BSc. Life Science Sem-VI	SEC: Public health and hygiene
MARCH	Theory:	Carbonate, phosphates, nitrates	B.Sc. Sem IV	GE IV: Aquatic biology
		UNIT 5: endocrine systems	B.Sc. Sem II	GE II: Human Physiology
		Unit 4 Cardiovascular systems: frank starling law	B.Sc Zoology 2 nd year Sem IV	Physiology: Life sustaining systems
	Practicals:			
		Comparative anatomy and developmental biology Study of the different types of placenta-histological sections through permanent slides or photomicrograph	B.Sc. Life sciences sem II (FLS) BATCH-III	LS Core II
		Comparative anatomy and developmental biology Study of the different types of placenta-histological sections through permanent slides or photomicrograph	B.Sc. Life sciences sem II (FLS) BATCH-I	LS Core II
		CASE STUDY OF BP, HYPERTENSION, DIABETES	BSc. Life Science Sem-VI	SEC: Public health and hygiene
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APRIL	Assignment	Individual phylum-based topics given as Assignment	B.Sc. Life Sciences Sem I	Core Course-I ANIMAL DIVERSITY
	Theory	Unit2.: Nutrients cycles in lakes UNIT 4. Cardiovascular systems Pace maker,	B.Sc. Sem IV B.Sc. Sem II B.Sc Zoology 2 nd year Sem IV	GE IV: Aquatic biology GE II: Human Physiology Physiology: Life sustaining systems
		DEVELOPMENTAL BIOLOGY Study of different sections of placenta (photomicrograph/ slides) Submission of project report on Drosophila culture/chick embryo development Revision/ mock exam	B.Sc. Life sciences sem II (FLS) BATCH-III	LS Core II
		DEVELOPMENTAL BIOLOGY Study of different sections of placenta (photomicrograph/ slides) Submission of project report on Drosophila culture/chick embryo development Revision/ mock exam	B.Sc. Life sciences sem II (FLS) BATCH-I	LS Core II
		MPN is most commonly applied for quality testing of water . SULABH INTERNATIONAL VISIT <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	BSc. Life Science Sem-VI	SEC: Public health and hygiene
	Tutorials:			



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Jan-April, 2019-2020 (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 Circadian rhythms, Tidal rhythms, Lunar rhythms, Advantages of biological clocks, Jet lag, Entrainment	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Introduction to Coelomates Evolution of coelom and metamerism	B.Sc. (Hons.) Zoology Sem II (FZH)	Non-Chordata II CC-III
	Practicals	Comparative Anatomy and developmental biology - Carapace and plastron of turtle /tortoise - Study of developmental stages of frog	B. Sc. Life Sciences Sem-II	Comparative Anatomy and developmental biology
		Non-chordata-II - Annelids - <i>Aphrodite</i>, <i>Nereis</i>, <i>Heteronereis</i>, <i>Sabella</i>, <i>Serpula</i>, <i>Chaetopterus</i>, <i>Pheretima</i>, <i>Hirudinaria</i> - T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm	B.Sc. (Hons.) Zoology Sem II FZH	Non-chordata-II CC-III
		Animal behavior & chronobiology - 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. - To study nests and nesting habits of the birds and social insects.	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
February	Theory	Wildlife Conservation and management - Habitat analysis, Physical parameters: Topography, Geology, Soil and water; - Biological Parameters: food, cover, forage, browse and cover estimation;	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		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)

		Arthropoda - General characteristics and Classification up to classes - Vision and Respiration in Arthropoda	B.Sc. (Hons.) Zoology Sem II FZH	Non-Chordata II CC-III
	Practicals:	Comparative Anatomy and developmental biology - Disarticulated skeleton of fowl and rabbit - Study of developmental stages of frog	B. Sc. Life Sciences Sem-II	Comparative Anatomy and developmental biology
		Non-chordata II - Molluscs - <i>Chiton, Dentalium, Pila, Doris, Helix, Unio, Ostrea, Pinctada, Sepia, Octopus, Nautilus</i> - Echinoderms - <i>Pentaceros/Asterias, Ophiura, Clypeaster, Echinus, Cucumaria</i> and <i>Antedon</i>	B.Sc. (Hons.) Zoology Sem II	Non-Chordata II CC-III
		Animal behavior & chronobiology - To study the behavioral responses of wood lice to dry condition. - To study behavior responses of wood lice in response to humid condition	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
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 perturbation.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Sexual Behavior and Biological Clocks - Asymmetry of sex, Sexual dimorphism mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice) - Infanticide, Consequences of mate choice for female fitness, Sexual conflict for male versus female parental care, Courtship behavior in 3-spine stickleback.	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Arthropoda - Metamorphosis in Insects - Social life in bees and termites	B.Sc. (Hons.) Zoology Sem II FZH	Non-Chordata II CC-III
	Practical	Comparative Anatomy and developmental biology - To study of different types of placenta - Temporary mount of rat sperm through slides	B. Sc. Life Sciences Sem-II	Comparative Anatomy and developmental biology
		Non-chordata II - Arthropods - <i>Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta</i>, termites and honey bees - Onychophora - <i>Peripatus</i>	B.Sc. (Hons.) Zoology Sem II FZH	Non-Chordata II CC-III
		Animal behavior & chronobiology - To study geotaxis behavior in earthworm. - To study the phototaxis behavior in insect larvae.	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)

	<u>Assignment</u>	WILD LIFE CONSERVATION AND MANAGEMENT • Concept of climax persistence/ Ecology of perturbation.	B.Sc. (Hons.) Zoology Sem VI (TZH)	Wildlife Conservation and management DSE-XI
		Animal behavior and chronobiology • Topic: Animal behavior related concepts	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Non-chordata –II • Onychophora General characteristics and Evolutionary significance & Water-vascular system in Asteroidea	B.Sc. (Hons.) Zoology Sem II FZH	Non-Chordata II CC-III
	<u>Mid Term Test</u>	Animal behavior and chronobiology Test will include all the topics covered	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)
		Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem VI TZH	Wildlife Conservation and management DSE-IV
		Test will include all the topics covered	B.Sc. (Hons.) Zoology Sem II FZH	Non-Chordata II CC-III
APRIL	Theory:	Population estimation • Population density, Natality, Birth rate, Mortality, fertility schedules and sex ratio computation	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)
		Revision	B.Sc. (Hons.) Zoology Sem II	Non-Chordata II CC-III
	Practicals:	Revision/ mock exam	B.Sc. Life Sciences Sem-II	Comparative Anatomy and developmental biology
		Revision/ mock exam	B.Sc. (Hons.) Zoology Sem II FZH	Non-Chordata II CC-III
		• To study behavioral activities of animals and prepare a short report • Revision/ mock exam	B.Sc. (H) Biological Sciences Sem VI TBS	Animal behavior & chronobiology (DSE III)



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

January-May, 2020

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)	Introduction to Immunity and Immune Cells	B.Sc Life Sciences 3 rd year Sem VI	DSE: Immunology
		Regulation of Water and solutes in aquatic and terrestrial animals	B. Sc. (H) Biological Sciences 2 nd year Sem IV	BS-C8: Systems Physiology
		Introduction to Research Methodology, Importance of proposals and surveys, Overview of research paper	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/Research Methodology
		Introduction to Coelomates & Metamerism, Various theories	B. Sc. (H) Zoology 1 st year Sem II	CC-III/ Non-chordates II: Coelomates
		Introduction to Evolutionary Biology, Understanding Phylogenetic trees and steps to construction	B. Sc. (H) Zoology 3 rd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Temporary mount of neuron, blood film preparation, ABO blood group, Preparation of haemin and haemochromogen crystals	B. Sc. (H) Zoology 2 nd year Sem IV	GEII: Human Physiology
		Theory and Usage of various search engines such as Pubmed, Google scholar, Scopus, Web of Science	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/ Research Methodology
		Restriction Mapping, Transformation efficiency, Introduction to Genomic DNA and plasmid DNA isolation	B. Sc. (H) Zoology 3 rd year Sem VI	DSE/ Animal Biotechnology
February	Theory:	Organs of immune system, Introduction to Hypersensitivity	B.Sc Life Sciences 3 rd year Sem VI	DSE: Immunology
		Osmoregulatory Organs in various terrestrial and aquatic animals	B. Sc. (H) Biological Sciences 2 nd year Sem IV	BS-C8: Systems Physiology
		Importance of Referencing and Understanding of Plagiarism, Discussion of various areas of Research, Motivation for Research	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/Research Methodology
		Importance of Mollusca, General Characteristics, Respiration in Mollusca	B. Sc. (H) Zoology 1 st year Sem II	CC-III/ Non-chordates II
		Phylogeny, Molecular clock, Introduction to Population Genetics (Hardy-Weinberg equilibrium)	B. Sc. (H) Zoology 3 rd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals: (4+4+4=12)	Estimation of haemoglobin using Sahli's haemoglobinometer, Examination of sections of mammalian stomach, lung, kidney, pancreas, ovary, testis, thyroid	B. Sc. (H) Zoology 2 nd year Sem IV	GEII: Human Physiology
		Types of Reference Styles, Learning usage of Endnote, Exercises related to Plagiarism	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/ Research Methodology
		Genomic DNA, PCR, DNA Fingerprinting, Southern, Northern blotting	B. Sc. (H) Zoology 3 rd year Sem VI	DSE/ Animal Biotechnology
March	Theory:	Types of Hypersensitivity, Autoimmunity and Immunodeficiency	B.Sc Life Sciences 3 rd year Sem VI	DSE: Immunology
		Excretion in animals, Thermoregulation	B. Sc. (H) Bio	BS-C8: Systems

			Sciences Sem IV	Physiology
		Concept of Null and alternate hypothesis, Discussion about Survey topics and Proposal topics with students	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/Research Methodology
		Torsion and Detorsion in Mollusca, Pearl formation in Mollusca	B. Sc. (H) Zoology 1 st year Sem II	CC-III/ Non-chordates II
		Natural Selection, types, derivation of unit of selection, kin selection, sexual selection	B. Sc. (H) Zoology 3 rd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals (4+4+4=12)	Recording of blood pressure, Repeat of histology sections	B. Sc. (H) Zoology 2 nd year Sem IV	GEII: Human Physiology
		Hypothesis building, Role of statistics, Types of graphs and its importance in Data presentation	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/ Research Methodology
		Western Blotting, DNA sequencing, Restriction digestion, plasmid DNA isolation	B. Sc. (H) Zoology 3 rd year Sem VI	DSE/ Animal Biotechnology
	Assignment	Topics for presentation assigned to students related to the syllabus and a new discovery related to the topic	B. Sc. (H) Biological Sciences 2 nd year Sem IV	BS-C8: Systems Physiology
		Assignment related to relevance of Non-chordate coelomate to scientific research	B. Sc. (H) Zoology 1 st year Sem II	CC-III/Non-chordates II: Coelomates
		Assignment related to History of Life and major evolutionary events	B. Sc. (H) Zoology 3 rd year Sem VI	CC-XIV/Evolutionary Biology
	Mid Term Test	Test questions in DU exam pattern of covered topics	B.Sc Life Sciences 3 rd year Sem VI	DSE: Immunology
		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 2 nd year Sem IV	BS-C8: Systems Physiology
		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 1 st year Sem I	CC-III/Non-chordates II: Coelomates
		Test questions in DU exam pattern of covered topics	B. Sc. (H) Zoology 3 rd year Sem VI	CC-XIV/Evolutionary Biology
April	Theory:	Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B.Sc Life Sciences 3 rd year Sem VI	DSE: Immunology
		Thermoregulation, Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 2 nd year Sem IV	BS-C8: Systems Physiology
		Presentations of Research Proposal and Survey Reports	B. Sc. (H) Zoology 2 nd year Sem IV	SEC/Research Methodology
		Discussion of Mid-term Test paper and previous year question papers, Revision of topics	B. Sc. (H) Zoology 1 st year Sem II	CC-III/ Non-chordates II
		Genetic drift, Role of migration and mutation in changing allele frequencies, Discussion of Mid-term Test paper and previous year question papers	B. Sc. (H) Zoology 3 rd year Sem VI	CC-XIV/Evolutionary Biology
	Practicals:	Revision exercises and test, viva for practical exams	B. Sc. (H) Zoology 2 nd year Sem IV	GEII: Human Physiology
		Survey and Proposal submission, viva for practical exams	B. Sc. (H) Zoology 2 nd year Sem IV	SEC: Research Methodology
		Revision exercises and test, viva for practical exams, checking of project report	B. Sc. (H) Zoology 3 rd year Sem VI	DSE: Animal Biotechnology



SEMESTER WISE TEACHING PLAN (2019-20)
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	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		Unit 5: Circulatory System - Evolution of heart and aortic arches	BSc. Life Science I Sem (Batch I & II)	Comparative Anatomy and Developmental Biology of Vertebrates: CCII
		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 Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
	Practicals:	-Study of scales of fishes -Frog osteology -Varanus osteology	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		Restriction mapping, Transformation efficiency, Introduction to genomic and plasmid DNA isolation.	BSc. Zoology Hons. VI Sem	Animal Biotechnology DSE III
		(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. <i>Connecting links/transitional forms - Eg. Euglena, Neopilina, Balanoglossus, Chimaera, Tiktaalik, Archaeopteryx, Ornithorhynchus</i> 3. Living fossils - Eg. <i>Limulus, Peripatus, Latimeria, Sphaenodon</i> 4. Vestigial, Analogous and Homologous organs using photographs, models or specimen	B.Sc. Biological Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
February	Theory:	Unit 6: Urinogenital System - Succession of kidney, Evolution of urinogenital ducts, Types of mammalian uteri Unit 4: Respiratory System 8 - Lungs and air sacs; Accessory	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII

		respiratory organs		
		Unit 6: Urinogenital System - Succession of kidney, Evolution of urinogenital ducts	BSc. Life Science I Sem (Batch I & II)	Comparative Anatomy and Developmental Biology of Vertebrates: CCII
		- 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 Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
	Practicals:	- Complete Varanus osteology - Fowl osteology - Rabbit osteology - Carapace and plastron of turtle/tortoise	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		- Genomic DNA, PCR, DNA Fingerprinting, Southern/ Northern Blotting.	BSc. Zoology Hons. VI Sem	Animal Biotechnology DSE III
		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 Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
March	Theory:	Unit 2: Skeletal System - Overview of axial and appendicular skeleton, Jaw suspensorium, Visceral arches Unit 7: Nervous System - Comparative account of brain Autonomic nervous system,	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		Unit 4: Respiratory System - Brief account of Gills, lungs, air sacs and swim bladder	BSc. Life Science I Sem (Batch I & II)	Comparative Anatomy and Developmental Biology of Vertebrates: CCII
		Unit 6 Forces of Evolution – Quantitative Studies Based on Biomathematics Population genetics – Gene pool; gene/allele frequency; genotypic frequency; phenotypic	B.Sc. Biological Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV

	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) – Calculation based on Selection Coefficient and Fitness). Fluctuations in gene frequency (when drift operates) – Calculation based on standard deviation		
Practicals	- Skulls of Frog, Varanus. Fowl, Rabbit - Adaptations of Herbivorous and Carnivorous Skulls - Study of arterial and urinogenital system of rat.	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
	- Western Blotting, DNA Sequencing, Restriction Digestion, plasmid DNA isolation.	BSc. Zoology Hons. VI Sem	Animal Biotechnology DSE III
	(B) Variations 1. Sampling of human height, weight and BMI for continuous variation 2. Sampling for discrete characteristics (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 Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
Assignment	- Previous years question paper.	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
Assignment	- Developmental Biology Portion of previous years papers.	BSc. Life Science I Sem (Batch I & II)	Comparative Anatomy and Developmental Biology of Vertebrates: CCII
	- Some Roll No's: Variation as Raw Materials of Change. Types of Variation- Continuous and discontinuous, heritable and non heritable, gene regulation as a source of variation, micro and macro evolution, Adaptive radiation with example of Galapagos islands. - Some Roll No's: Human ancestry and phylogeny, primate characteristics and unique hominin characteristics. Primate phylogeny leading to hominin line. Australopithecus, homo habilis, homo erectus.....Y-chromosome studies. - Some Roll No's: Chemogeny – An overview of pre-biotic conditions and events; experimental proofs to abiotic origin of micro- and macro-molecules. Current concept of chemogeny – RNA first hypothesis. Biogeny – Cellular evolution based on proto-cell models (coacervates and proteinoid microspheres). Origin of photosynthesis – Evolution of oxygen and ozone buildup. Endosymbiotic theory –	B.Sc. Biological Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV

		Evolution of Eukaryotes from Prokaryotes		
	Mid Term Test	- Circulatory system, Urinogenital System, Respiratory System, Skeletal system.	B.Sc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		- Circulatory System, Urinogenital System, Respiratory System	BSc. Life Science I Sem (Batch I & II)	Comparative Anatomy and Developmental Biology of Vertebrates: CCII
		- Unit 5 and Unit 6	B.Sc. Biological Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
April	Theory:	Unit 7: Nervous System - Spinal cord, Cranial nerves in mammals	BSc. Zoology Hons. IV Sem	Comparative anatomy of Vertebrates: CCVIII
		Unit 8: Sense Organs - Classification of receptors - Brief account of visual and auditory receptors in man		
		Unit 3: Digestive System - Brief account of alimentary canal and digestive glands		
		Unit 9 Evolution of Plants and Fungi Origin of land plants – Terrestrial algae and Bryophytes; alternation of generations.	B.Sc. Biological Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV
	Practicals:	- Mock exam, checking of project report, viva.		Comparative anatomy of Vertebrates: CCVIII
		- Revision exercises and test, viva for pracs. Checking of project report.	BSc. Zoology Hons. VI Sem	Animal Biotechnology DSE III
		(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	B.Sc. Biological Sciences (VI Semester)	Concepts of Evolutionary Biology BS CXIV



**SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
January-May, 2019**

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, 2 nd 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, 2 nd)	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, 2020

Name of the Faculty: Dr. Sadqua Shameem

Department: Zoology

Semester: II / IV / VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory:	Unit-1 Introduction to animal diversity, Whittaker's five kingdom classification, Systematic classification and general features of chordates and non chordates (Protista, Porifera,	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
		Unit-2 Functioning of Excitable Tissue (Nerve and Muscle), Structure of neuron and brief introduction of neuroglia;	B.Sc. (Hons.) Sem II	GE II/ HUMAN PHYSIOLOGY
		Unit-6 Major Events in History of Life Organic variations	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
		Unit 2: Historical review of evolutionary concept: Lamarckism .	B.Sc. (Hons.) Zoology Sem VI	Core Course-XIV EVOLUTIONARY BIOLOGY
	Practicals:	Study of following specimens: <i>Euglena</i> , <i>Paramecium</i> , <i>Sycon</i> , , <i>Tubipora</i> , <i>Taenia</i> , <i>Ascaris</i> <i>Aphrodite</i> , <i>Leech</i> , <i>Peripatus</i> , <i>Limulus</i> , Hermit crab, Beetle, <i>Pila</i> , <i>Chiton</i> , <i>Dentalium</i> , <i>Octopus</i> , <i>Asterias</i>	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
		With continuous evaluation Evaluation of students on their performance in practical and Record		
		Study of Human Karyotypes (normal and abnormal). 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

		1. Study of household pests following with reference to public health. 2. Calculate the BMI of students and analyse the results with suitable statistical tools. <i>With continuous evaluation - Evaluation of students on their performance in practical and Record</i>	B.Sc. Life Sciences Sem VI	SEC / PUBLIC HEALTH AND HYGIENE
FEBRAURY	Theory:	Unit-1 Systematic classification and general features of chordates and non chordates (Cnidaria, Platyhelminthes, Aschelminthes, Annelida, Arthropoda, Mollusca, Echinodermata, Protochordata, Osteichthyes, Amphibia, Reptilia, Aves and Mammals.Principles of taxonomy,	B.Sc. (Hons.) Biological Science Sem - II	BS – 4 BIODIVERSITY
		Unit-2 Structure of skeletal muscle; Mechanism of muscle contraction (Sliding filament theory); Propagation of nerve impulse (myelinated and non-myelinated)	B.Sc. (Hons.) Sem II	GE II/ HUMAN PHYSIOLOGY
		Unit-7 Lamarckism, Darwinism, Neo-Darwinism Unit-8 Types of fossils, Incompleteness of fossil record, Dating of fossils , Phylogeny of horse, Organic variations Unit 9 Isolating Mechanisms; Natural selection(Example: Industrial melanism); Types of natural selection (Directional, Stabilizing, Disruptive), Artificial selection Unit-10 Biological species concept (Advantages and Limitations); Modes of speciation (Allopatric, Sympatric)	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
		Historical review of evolutionary concept: Darwinism, 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
	Practicals:	Dissections/Virtualdemonstrationi Digestive and nervous system of Cockroach; Unstained mount of Placoid scales. -Study of following specimens: <i>Balanoglossus</i> , <i>Amphioxus</i> <i>Petromyzon</i> , <i>Pristis</i> , <i>Hippocampus</i> , <i>Labeo</i> , <i>Ichthyophis/Uraeotyphlus</i> , <i>Salamander, Draco,Naja</i> Three	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY

MARCH		common birds , Bat <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record -Visit to Biodiversity park,		
		-Study of Mendelian Inheritance and gene interactions (Non Mendelian Inheritance) using suitable examples. Verify the results using Chi-square test. -Study of homology and analogy from suitable specimens/ pictures -Study of fossil evidences from plaster cast models and pictures <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
	Assignment	1. Measure the blood pressure using sphygmomanometer. 2. Testing potability of water for human consumption by MPN method <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem VI	SEC / PUBLIC HEALTH AND HYGIENE
		Separate questions will be given to students from previous year question paper.	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
		Separate questions will be given to students from previous year question paper.	B.Sc. (Hons.) Sem II	GE II/ HUMAN PHYSIOLOGY
		Separate questions will be given to students from previous year question paper.	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
		Separate questions will be given to students from previous year question paper.	B.Sc. Life Sciences Sem IV	Core Course-XIV EVOLUTIONARY BIOLOGY
		Unir-2 Neuromuscular Junction Unit-4 Functional anatomy of kidney	B.Sc. (Hons.) Sem II	GE II/ HUMAN PHYSIOLOGY

	Unit-8 Dating of fossils Unit 9 Organic variations Unit-11 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, neutral theory of molecular evolution, Molecular clock ,example of globin gene family	B.Sc. (Hons.) Zoology Sem VI	Core Course-XIV EVOLUTIONARY BIOLOGY
Practicals:	To study faunal composition of water samples (Lucky drop method) Study of a few endangered species of amphibians ,reptiles, birds and mammals of India. <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
	-Phylogeny of horse with diagrams/ cut outs of limbs and teeth of horse ancestors -Darwin's Finches with diagrams/ cut outs of beaks of different species - Study of Linkage, recombination, gene mapping using the data. <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
	-Visit to sewage treatment/Sulabh International -Data collection, case studies or interviews of the individuals suffering from diseases <i>With continuous evaluation</i> Evaluation of students on their performance in practical and Record	B.Sc. Life Sciences Sem VI	SEC / PUBLIC HEALTH AND HYGIENE
<u>Mid Term Test</u>	Test questions in DU exam pattern of covered topics	B.Sc. (Hons.) Biological Science	BS – 4 BIODIVERSITY

APRIL			Sem - II	
		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
		Unit-4 Mechanism and regulation of urine formation	B.Sc. (Hons.) Sem II	GE II/ HUMAN PHYSIOLOGY
		Unit-12 Mass extinction (Causes, Names of five major extinctions,	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
		Unit-3 Molecular clock ,example of globin gene family	B.Sc. (Hons.) Zoology Sem VI	Core Course-XIV EVOLUTIONARY BIOLOGY
	Practicals:	- Revision and Submission of File and - Biodiversity parks report, containing photographs with appropriate write up. -Mock test	B.Sc. (Hons.) Biological Science Sem II	BS – 4 BIODIVERSITY
		-Revision and Submission of File and Geology museum report, containing photographs with appropriate write up -Mock test	B.Sc. Life Sciences Sem IV	Core Course-IV GENETICS AND EVOLUTIONARY BIOLOGY
		- Revision and Submission of Report and File, - Viva for practical exams. -Mock test	B.Sc. Life Sciences Sem VI	SEC PUBLIC HEALTH AND HYGIENE



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

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 - Fertilization - Cleavage	BSc. Life Science II Sem	Comparative anatomy and developmental Biology CC II
		UNIT 2: Fresh Water Biology - Streams - Stages of Streams - Physiochemical Environment	BSc. (Hons) Sem IV	Aquatic Biology GE 4
		UNIT 1: Introduction to aq. Fish keeping UNIT2: Biology of Aq. Fishes	BSc. Life Science IV Sem	Aquarium Fish Keeping SEC
	Practicals:	UNIT 1: Introduction to evolutionary theories - Lamarckism - Pre-Darwinism - Darwinism	BSc. Biological Science VI Sem	Concepts of Evolutionary Biology: C 14
		- 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 III)	Genetics and Evolutionary Biology: CCIV
		- Determine the amount of dissolved Oxygen		Aquatic Biology: GEIV
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 4: - Micro-macro evolution	BSc. Biological Science VI Sem	Concepts of Evolutionary Biology: C 14
		UNIT 10: Early embryonic development - Morphogenetic movements - Early development of frog - Human - Fate Maps	BSc. Life Science II Sem	Comparative anatomy and developmental Biology CC II

		UNIT 2: Fresh Water Biology - Streams - Physiochemical Environment	BSc. (Hons)	Aquatic Biology GE 4
		UNIT2: Biology of Aq. Fishes - Fresh water fishes - Marine water fishes	BSc. Life Science IV Sem	Aquarium Fish Keeping SEC
	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 Phylogeny of horse - Study of fossil evidences - Study of Mendelian Inheritance (Chi square test)	BSc. Life Science IV Sem (Batch III)	Genetics and Evolutionary Biology : CCIV
		- Study of instruments used in Limnology - Determine the area of a lake using graphimetric and gravimetric method - Determine the amount of Turbidity, free carbon dioxide and alkalinity		Aquatic Biology: GEIV
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: Fresh Water Biology - Adaptations of Hill Stream Fishes - Adaptations of deep sea organisms	BSc. (Hons)	Aquatic Biology GE 4
		UNIT 11: Late embryonic development - Metamorphosis - Implantation - Types of Placenta	BSc. Life Science II Sem	Comparative anatomy and developmental Biology CC II
		UNIT 3: FOOD and Feeding of Fishes UNIT 4: Fish Transport	BSc. Life Science IV Sem	Aquarium Fish Keeping SEC
	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
		- Study of Darwin Finches - Study of linkage, recombination and gene mapping	BSc. Life Science IV Sem (Batch III)	Genetics and Evolutionary Biology : CCIV
		- Study of Macrophytes, phytoplanktons and zooplanktons - Visit to a sewage treatment plant and report submission		Aquatic Biology: GEIV
	Assignment	- Last two years question papers	BSc. Life Science II Sem	Comparative anatomy and developmental Biology CC II
	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 4: Sources of evolution - Gene regulation - Revision	BSc. Biological Science VI Sem	Concepts of Evolutionary Biology: C 14
		UNIT 5: Maintenance of Aquarium	BSc. Life Science IV Sem	Aquarium Fish Keeping SEC
		Revision	BSc. (Hons)	Aquatic Biology GE 4
		UNIT 12: Applied aspects - Stem cells - Cloning - IVF UNIT 9: History of developmental biology	BSc. Life Science II Sem	Comparative anatomy and developmental Biology CC II
	Practicals:	- Mock Test - Revision	BSc. Zoology Hons. IV Sem	Biochemistry of Metabolic Processes: CCX
		- Mock Test - Revision - Practice of Numericals	BSc. Life Science IV Sem (Batch III)	Genetics and Evolutionary Biology : CCIV
		- Mock Test - Revision		Aquatic Biology: GEIV



**SEMESTER WISE
TEACHING PLAN
Sri Venkateswara College
January-April, 2020**

Name of the Faculty: Mrs. Himani Khurana

Department: Zoology

Semester: Even – IV, VI

Subjects:

THEORY: B.Sc. (P) Life Sciences, Semester VI: **Immunology**

PRACTICAL: B.Sc. (H) Zoology, Semester IV: **Biochemistry of Metabolic Processes**

B.Sc. (P) Life Sciences, Semester IV: **Genetics and Evolutionary Biology**

B.Sc. (P) Life Sciences, Semester IV: **SEC: Aquarium Fish Keeping**

B.Sc. (P) Life Sciences, Semester VI: **Public Health and Hygiene**

B.Sc. (H) Biological Sciences, Semester VI: **Animal Behavior and Chronobiology**

Month		Topics	Course	Paper Code/Name
January	Theory:	Unit 1: Overview of the Immune System Introduction to basic concepts in immunology, components of immune system	B.Sc. (P) Life Sciences, Semester VI	DSE 4/ Immunology
	Practical:	Experiment 1: Protein estimation by Lowry's method Experiment 6: Trace the labelled C atoms in TCA cycle	B.Sc. (H) Zoology, Semester IV	CC X/ Biochemistry of Metabolic Processes
		Experiment 3: Study of Human Karyotypes (normal and abnormal). Experiment 1: 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 the practical	B.Sc. (P) Life Sciences, Semester IV (Batch III)	C IV/ Genetics and Evolutionary Biology
		Experiment 1: 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 Experiment 2: To study nests and nesting habits of the birds and social insects	B.Sc. (H) Biological Sciences, Semester VI	DSE III/ Animal Behavior and Chronobiology
		Experiment 5: Calculate the BMI of students and analyse the results with suitable statistical tools Experiment 6:	B.Sc. (P) Life Sciences, Semester VI	SEC 4/ Public Health and Hygiene

		Measure the blood pressure using sphygmomanometer		
February	Theory:	Unit 1: Overview of the Immune System Principles of innate and adaptive immune system	B.Sc. (P) Life Sciences, Semester VI	DSE 4/ Immunology
	Practical:	Experiment 4: Study of Biological Oxidation (SDH) Experiment 3: Study of enzymatic activity of Trypsin Study of enzymatic activity of Lipase	B.Sc. (H) Zoology, Semester IV	CC X/ Biochemistry of Metabolic Processes
		Experiment 5: Study of homology and analogy from suitable specimens/pictures Experiment 4: Study of fossil evidences from plaster cast models and pictures Experiment 6: 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. (P) Life Sciences, Semester IV (Batch III)	C IV/ Genetics and Evolutionary Biology
		Experiment 3: To study the behavioral responses of wood lice to dry condition Experiment 4: To study behavior responses of wood lice in response to humid condition	B.Sc. (H) Biological Sciences, Semester VI	DSE III/ Animal Behavior and Chronobiology
		Experiment 3: Types and composition of fish feed Preparation of fish feed in the lab Experiment 4: Setting up of an aquarium in the lab Techniques for fish handling and packaging	B.Sc. (P) Life Sciences, Semester IV (Batch 2)	SEC 2/ Aquarium Fish Keeping
March	Theory:	Unit 2: Cells and Organs of the Immune System Haematopoeisis, Cells of immune system	B.Sc. (P) Life Sciences, Semester VI	DSE 4/ Immunology
	Practical:	Experiment 5: To perform Acid Phosphatase assay To perform Alkaline Phosphatase assay Experiment 2: To perform SGPT To perform SGOT	B.Sc. (H) Zoology, Semester IV	CC X/ Biochemistry of Metabolic Processes

	Experiment 6: Darwin's Finches with diagrams/ cut outs of beaks of different species Experiment 2: Study of Linkage, recombination, gene mapping using the data With continuous evaluation Evaluation of students on their performance in practical and Record	B.Sc. (P) Life Sciences, Semester IV (Batch III)	C IV/ Genetics and Evolutionary Biology
	Experiment 5: To study geotaxis behavior in earthworm Experiment 6: To study the phototaxis behavior in insect larvae	B.Sc. (H) Biological Sciences, Semester VI	DSE III/ Animal Behavior and Chronobiology
	Experiment 6: Potential of aquarium fish farm as cottage industry Field trip to aquarium shop	B.Sc. (P) Life Sciences, Semester IV (Batch 2)	SEC 2/ Aquarium Fish Keeping
April	Theory: Unit 2: Cells and Organs of the Immune System Organs (primary and secondary lymphoid organs) of the immune system Revision	B.Sc. (P) Life Sciences, Semester VI	DSE 4/ Immunology
	Practical: Mock Test Revision	B.Sc. (H) Zoology, Semester IV	CC X/ Biochemistry of Metabolic Processes
	Revision Mock Test	B.Sc. (P) Life Sciences, Semester IV (Batch III)	C IV/ Genetics and Evolutionary Biology
	Experiment 7: To study behavioral activities of animals and prepare a short report Revision/mock exam	B.Sc. (H) Biological Sciences, Semester VI	DSE III/ Animal Behavior and Chronobiology
	Evaluation of Practical File and Report Practice and repetition of practical Conduct of Mock examination	B.Sc. (P) Life Sciences, Semester IV (Batch 2)	SEC 2/ Aquarium Fish Keeping



**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 Mudiarysan	B.A Prog Tamil DSC	62081210
September	Theory Assignment	Study of Important Authors: Tamil Creative style of Introduction of Mudiarysan and contemporary writers Mudiarysan	B.A Prog Tamil DSC	62081210
October	Theory Mid-Term Test	Study of Important Authors: Tamil Mudiarysan Kaappiya Punaithiran	B.A Prog Tamil DSC	62081210
November	Theory	Study of Important Authors: Tamil Art and Ideology of Mudiarysan	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
SRI VENKATESWARA COLLEGE
Jan-May 2020

Name of the Faculty: Geeta Jayaram Sodhi

Department: Sociology

Semester: II (Jan- May, 2020)

Month		Topic(s)	Course	Paper Code/Name
JAN	Theory	1.Plurality of the Sociological Perspective 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.Interpretive Sociology 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.Conflict Theory 2. Feminist Theory	Core Course-03	Introduction to Sociology II

	Practical	NA	NA	NA
	Tutorial	Interpretive Sociology	Core Course-03	Introduction to Sociology II
	<u>Assignment</u>	Examine the Functionalist perspective of Society	Core Course-03	Introduction to Sociology II
	Mid Sem Exam	Topics 1 and 2		
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
Jan-May 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Geeta Jayaram Sodhi

Department: Sociology

Semester: IV (Jan-May, 2020)

Month		Topics	Course	Paper Code/Name
JAN	Theory	1.Sociological Research 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. Comparative Method	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
	<u>Assignment</u> <u>Mid Sem Exam</u>	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
SRI VENKATESWARA COLLEGE
Jan-May 2020

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: IV (Jan- May, 2020)

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
	<u>Assignment</u>	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



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
Jan-May 2020

Name of the Faculty: Padma Priyadarshini

Department: Sociology

Semester: II (Jan-May, 2020)

Month		Topics	Course	Paper Code/Name
JAN	Theory	What is Family? 1. Historical account 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: Barrett, Cartledge and Ryan, Coontz and Shah)	GE 02	Family and Intimacy
	<u>Assignment</u>	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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (II), Semester II (January-June, 2020)

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
	Assignment (10 Marks)	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
	Mid-Semester Examination (10 Marks)	Two short essays (350 words each) to be attempted on peasant and women's 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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nabanipa Bhattacharjee

Department: Sociology

Semester: BA (Program), Semester VI (January-June, 2020)

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
	<u>Assignment (10 Marks)</u>	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 world. Elaborate.	Generic Elective 02 (GE 02)	Economy and Society
	<u>Mid-Semester Examination (10 Marks)</u>	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
SRI VENKATESWARA COLLEGE
Jan-June 2020

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: IV

Course Details : B. A. (Hons.) Core Course 08 – Sociology of Kinship

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Key Approaches in Kinship: Descent , Alliance, Cultural	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Explaining kinship through the study of descent. The study of African societies by early anthropologists Difference bw cultural and structural approach in kinship	Core Course 08	Sociology of Kinship
FEBRUARY	Theory	Concepts of family, household, domestic groups	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	How did Schneider reconceptualize kinship and its meaning? How do concepts of family and domestic cycle redefine our understanding of kinship	Core Course 08	Sociology of Kinship

MARCH	Theory	The anthropological definition of marriage Contemporary anthropological definitions of marriage Relatedness	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	Exploring the definition of kinship among the Nayars, Sinhalese law Hindu marriage law Relatedness among the Malays	Core Course 08	Sociology of Kinship
	<u>Assignment 01</u>	Write a note on the structural principles underlying African kinship systems.	Core Course 08	Sociology of Kinship
APRIL	Theory	Gender and kinship Reconstructing families	Core Course 08	Sociology of Kinship
	Practical		NA	NA
	Tutorial	Interconnections of gender and kinship How do chosen families redefine kinship	Core Course 08	Sociology of Kinship
	<u>Assignment 02</u> <u>(in lieu of the mid-sem test)</u>	How are elements of biology and culture synthesized and reflected in kinship? Provide illustrations	Core Course 08	Sociology of Kinship

MAY	Theory	Questioning biological paternity/maternity with IVF	Core Course 08	Sociology of Kinship
	Practical	NA	NA	NA
	Tutorial	New reproductive technologies and the construction of identity	Core Course 08	Sociology of Kinship



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
Jan-June 2020

Name of the Faculty: DR. URMI BHATTACHARYYA

Department: SOCIOLOGY

Semester: VI

Course Details : B. A. (Hons.) DSE – Visual Culture

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introducing visual culture and the process of seeing The Spectacles of Modernity Critiquing the history of visual culture	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Explaining the social construction of seeing How have ways of seeing influenced our knowledge throughout history Critiquing technical modernity How can visual culture escape the dominant narrative of the West	DSE 07	Visual Culture
FEBRUARY	Theory	Narrative and visual forms of perception in contemporary life Panopticism and power Power and visibility Representing Authority in colonial India	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Global events and local narratives How did visibility become a source of power What is countervisuality How was authority symbolically represented in colonial India	DSE 07	Visual Culture

MARCH	Theory	State and Photographic Records Critical Art Representation, theatre and resistance	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Photography, technology and truth Problems and possibilities of critical art Carnival and theatre as subversive contexts	DSE 07	Visual Culture
	<u>Assignment 01</u>	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	Visual Practices and identity formation Everyday life and visibility Printed image and identity Globalism, visibility and identity	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	How does technology contribute to the restructuring of space and identity How does the practice of everyday life involving tactics and strategies help in the understanding of visibility Technologically equipped forms of visibility and the definition of the market as well as individual identity	DSE 07	Visual Culture
	<u>Assignment 02</u> <u>(in lieu of the mid-sem test)</u>	With reference to Foucault's panopticism, write a note on the different forms of discipline as witnessed in the 18 th CE plague-stricken town and the 19 th CE panoptic establishment.	DSE 07	Visual Culture

MAY	Theory	Revision	DSE 07	Visual Culture
	Practical	NA	NA	NA
	Tutorial	Revision and clarification of doubts	DSE 07	Visual Culture



SEMESTER WISE TEACHING PLAN
Jan-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III (Jan-April 2020) 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 and Sexual Assaults on Women; Rewards of Rape; Recovering Subversions	Generic Elective 04	Gender and Violence
	Practical	NA	NA	NA
	Tutorial	NA	NA	NA
	<u>Assignment</u>	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
Jan-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Antasa Vairagya

Department: Sociology

Semester: III (Jan-April 2020) BA (P)

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Sex, Gender and Sexuality	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 difference between 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
	<u>Assignment</u>	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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Nupurnima Yadav

Department: Sociology

Semester: 6th B.A (Hons) (January-June, 2020)

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,	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 and Ogives)	Core Course-14	Sociological Research Methods – II
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	Practical	NA	NA	NA
	Tutorial	Supervision of their Research questions and techniques of doing research. their interview schedules and questionnaires were closely		
	<u>Mid- Semester exam (10</u>			
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.		

	<u>Project (10 Marks)</u>			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
January-June 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Nupurnima Yadav

Department: Sociology

Semester: VI B.A(Hons) (January-June 2020)

Paper: DSE 06 Indian Sociological Traditions

Month		Topics	Course	Paper Code/Name
January	Theory	G.S Ghurye: Caste and Race City and Civilization Radhakamal Mukerjee : 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 Mukerjee's work	DSE 06	Indian Sociological Traditions
February	Theory	Radhakamal Mukerjee : Personality, 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
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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	Irawati Karve : Gender and Kinship Leela Dube: Caste and Gender	DSE 06	Indian Sociological Traditions

	Practical	NA	NA	NA
	Tutorial	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
	<u>Mid-Semester Examination (10 Marks)</u>			

May	Theory		DSE 06	Indian Sociological Traditions
	Practical	NA	NA	NA
	Tutorial		DSE 06	Indian Sociological Traditions



SEMESTER WISE TEACHING PLAN
January- April 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jaiswal

Department: Sociology

Semester: VI (January- April 2020)

Month		Topic(s)	Course	Paper Code/Name
February	Theory	1. Introduction to the sociology of health and medicine	Discipline Specific Elective	DSE 05 Sociology of Health and Medicine
	Practical	NA	NA	NA
	Tutorial	Trace the origin and development of modern medicine in arriving at an understanding of sickness, disease and illness.	Discipline Specific Elective	Sociology of Health and Medicine
MARCH	Theory	1. Theoretical Orientation in Health and Illness	Discipline Specific Elective	Sociology of Health and Medicine
	Practical	NA	NA	NA
	Tutorial	examine how the concept of 'sick role' encapsulates the functional aspect of medicine as a social system	Discipline Specific Elective	Sociology of Health and Medicine.
APRIL	Theory	Negotiating Health and Illness	Discipline Specific Elective	Sociology of Health and Medicine.

ASSIGNMENTS QUESTIONS	Practical	NA	NA	NA
	Tutorial	evaluate the ways in which biomedicine has 'overmedicalized' women's health issues.	Discipline Specific Elective	Sociology of Health and Medicine.
	1. ELUCIDATE WITH APPROPRIATE EXAMPLES THE ROLE OF HEALTH CULTURE AND POPULAR PERCEPTION IN CHOOSING HEALTHCARE SYSTEMS. 2. TO BRIEFLY ANALYSE ANY ONE OF THE FOLLOWING WITH RESPECT TO ITS RELEVANCE IN CONTEMPORARY TIMES: - Nichter, Mark and Mimi Nichter (1996) Popular Perceptions of Medicine: A South Indian Case Study. - Qadeer, Imrana 2013 Universal Health Care in India: Panacea for whom? Indian Journal of Public Health Volume 57 Issue 4 October-December 2013 pp 225-229 - V.Das, R.K.Das and L.Coutinho (2000). Disease Control and Immunisation: A Sociological Enquiry. EPW 35 (8/9). 625-632.			



SEMESTER WISE TEACHING PLAN
January- April 2020
SRI VENKATESWARA COLLEGE

Name of the Faculty: Niharika Jasiwal
Department: Sociology
Semester: V (January- April, 2020)

Month		Topics	Course	Paper Code/Name
FEBRUARY	Theory	introducing stratification	Core Course 10	Social Stratification
	Practical			
	Tutorial	HOW	Core Course 10	Social Stratification
MARCH	Theory	Theories of social stratification	Core Course 10	Social Stratification
	Practical			
	Tutorial	Critically examine the functional necessity of functionalism	Core Course 10	Social Stratification

March	Theory	Identities and Inequalities	Core Course 10	Social Stratification
	Practical		Core course 10	Social Stratification
	Tutorial	discuss the intersectionalities of race, class and gender with relevant examples	Core Course 10	Social Stratification
APRIL	Theory	MOBILITY AND REPRODUCTION	Core course 10	Social Stratification
	Practical			

	Tutorial	critically examine the role of educational system in the reproduction of cultural capital	CORE COURSE 10	SOCIAL STRATIFICATION
ASSINGMENT QUESTIONS: 1. How is Marxian notion of class different from Weberian notion of class? 2. What is gendered stratification? Discuss with suitable examples.				



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr M PADMA SURESH

Department: ECONOMICS

Semester : IV 2019-20

MONTH		TOPICS	COURSE	PAPER CODE/NAME
JANUARY	Theory	Nature of research –Ch 1,2 Ranjit Kumar(RK) Formulating the research topic-Ch 4 review of literature-Ch 3(Flick) Discussion on how to choose a research topic	BA PROG SEC- Economics	Research Methodology 62273426
FEBRUARY	Theory	Approaches to research and research strategy-Ch 5,6,7,8,13 of RK, Research ethics-Ch 14 Submission of research proposal.		
MARCH	Theory	Using data-primary and secondary data, Sample selection:Ch 9,10,11,12 of RK Conduct of Practice internal test on Ch 1-8 of RK. Submission of research proposal		
APRIL	Theory	Analyzing data, Writing Project Report-Ch 15,16.17 of RK Submission of Project/Research Report		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. M PADMA SURESH

Department: ECONOMICS

Semester : IV /2019-20

MONTH		TOPICS	COURSE	PAPER CODE/ NAME
JANUARY	Theory	Agriculture-Performance, Policies, Productivity, credit, labour, land reforms, regional variations. Mahendra Dev in Oxford Companion, Maitreesh Ghatak, World Bank, A. Vaidyanathan and TCA Ananat.	BA(Hons)	Economic Development and Policy in India-II 62277603
	Tutorials	Discussion, Practice writing.		
FEBRUARY	Theory:	Agriculture contd. Industry-Policies, Performance, production trends, Small scale industries, public sector, FDI Rao &M. Dev, Pulin Nayak, R. Nagaraj, Nagesh Kumar.		
	Tutorials:	Discussion, Assignments.		
MARCH	Theory:	Industry contd. Foreign Trade- Trade policies BOP and Bot. ,Economic Survey, Uma Kapila.		
	Tutorials:	Internal Test-1		

APRIL	Theory:	Trade contd. India and WTO Kapila , Biswajit Dhar, Tilak et al.		
	Tutorials:	Discussion of past papers. Revision. Interna Test-2		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Aruna Rao

Department: Economics

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1 & 2	B.A (H) Economics	Environmental Economics
	Practicals			
	Tutorials	Assignment on unit 1 & 2		
FEBRUARY	Theory:	Unit 2 & 3	B.A (H) Economics	Environmental Economics
	Practicals:			
	Tutorials:	Assignment on unit 2 & 3		
	<u>Assignment :</u>			
MARCH	Theory:	Unit 3 & 4	B.A (H) Economics	Environmental Economics
	Practicals:			

	Tutorials:	Assignment on unit 3 & 4		
	<u>Test</u>	Internal Assessment 1		
APRIL	Theory:	Unit 5 & 6	B.A (H) Economics	Environmental Economics
	Practicals:			
	Tutorials:	Assignment on unit 5 & 6		
MAY	Theory:	Unit 5 & 6	B.A (H) Economics	Environmental Economics
	Practicals:			
	Tutorials:	Assignment on unit 5 & 6		
	Test :	Internal Assessment 2		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Aruna Rao

Department: Economics

Semester : II

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1	B.A (Prog)	Principles of Microeconomics II
	Practicals			
	Tutorials	Assignment on unit 1		
FEBRUARY	Theory:	Unit 1 & 2	B.A (Prog)	Principles of Microeconomics II
	Practicals:			
	Tutorials:	Assignment on unit 1 & 2		
	<u>Assignment :</u>			
MARCH	Theory:	Unit 2 & 3	B.A (Prog)	Principles of Microeconomics II
	Practicals:			
	Tutorials:	Assignment on unit 2 & 3		
	<u>Test</u>	Internal Assessment 1		

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



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: KRISHNAKUMAR S (2019-20)

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	Assignmennts on neoclassical Solow growth model from Mankiw workbook		
FEBRUARY	Theory:	Theories of consumption: absolute income hypothesis Duesenberry relative income hypothesis, Permanent Income Hypothesis, Modigliani Brumberg approach. Fisher's intertemporal model, Hall model	BA(Hons) Sem IV	Intermediate Macroeconomics -II
	Practicals:			
	Tutorials:	Economics Growth tutorials and tests . some new readings		
MARCH	Theory:	Theories of investment. Jorgenson's neoclassical theory of investment, Tobin's q theory, residential investment,	BA(Hons) Sem IV	Intermediate Macroeconomics -II
		Inventory management. Theories of demand for money		

	Practicals:			
	Tutorials:	Problems on inter-temporal approach. Discussion of some articles.		
	<u>Assignment :</u>	Test based on		
APRIL	Theory:	Critical rate of interest. Regressive expectations model. Baumol Tobin approach. Tobin's liquidity preference as behaviour towards risk. Fiscal and Monetary Policy Debt stabilization .Growth in Jones-Romer approach	BA(Hons) Sem IV	Intermediate Macroeconomics -II
	Practicals:			
	Tutorials:	Problems on debt stabilization , Taylor's rule		
	<u>Test</u>			
May	Theory:	Economics of ideas. Miscellaneous. Revision	BA(Hons) Sem IV	Intermediate Macroeconomics -II
	Practicals:			
	Tutorials:			



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: KRISHNAKUMAR S

Department: ECONOMICS

Semester : II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Introduction to 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.	BA(Hons) Sem II	Introductory Macroeconomics
	Practicals			
	Tutorials	Reading balance of payments sheet from Economics Survey.		
FEBRUARY	Theory:	Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy. Inflation and its costs; hyperinflation.	BA(Hons) Sem II	Introductory Macroeconomics
	Practicals:			
	Tutorials:	Exploring RBI Datawarehouse for the different definitions of money supply. New monetary aggregates.		
MARCH	Theory:	Classical and Keynesian systems; simple Keynesian model of income determination; IS-LM model.	BA(Hons) Sem II	Introductory Macroeconomics

	Practicals:			
	Tutorials:	Numericals on the simple model and IS LM		
	Assignment :	Project on the study of the Balance of payments sheet of the countries from IMF, RBI Datawarehouse etc.		
APRIL	Theory:	Fiscal and monetary multipliers.	BA(Hons) Sem II	Introductory Macroeconomics
	Practicals:			
	Tutorials:	Numericals on IS LM and fiscal and monetary policy multipliers		
	Test	Test on Simple Theory and IS LM Analytics		
May	Theory:	Overview of the course . Contemporary Issues.	BA(Hons) Sem II	Introductory Macroeconomics
	Practicals:			
	Tutorials:			



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: N KALITHASAMMAL

Department: Economics

Semester-VI

Month		Topics		Paper Name/
JANUARY	Theory	.Macroeconomics over view of India,the growth story is discussed with the view of India development report	Economics III YEAR.	INDIAN ECONOMY PART II
	Tutorials	The basic educational trend and development and the problems of migrated people in India discussed elaborately.		
FEBRUARY	Theory:	Agricultural growth in India since 1991, going to teach through RBI DEAP study		
	Tutorials:	Reasons for failure of growth in agriculture 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:	Inequality and concentration of income is going to explain with some inclusive ideas.		
	<u>Assignment :</u>	Two tests 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 investment related questions going to work out.		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: N. KALITHASAMMAL

Department: Economics

Semester-IV

Month		Topics		Paper Name/
JANUARY	Theory	.Macroeconomics over view of India,the growth story is discussed with the view of India development report	GE-II YEAR	INDIAN ECONOMY PART II
	Tutorials	The basic educational trend and development and the problems of migrated people in India discussed elaborately.		
FEBRUARY	Theory:	Agricultural growth in India since 1991, going to teach through RBI DEAP study		
	Tutorials:	Reasons for failure of growth in agriculture 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:	Inequality and concentration of income is going to explain with some inclusive ideas.		
	<u>Assignment :</u>	Two tests 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 investment related questions going to work out.		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Meenakshi Sharma

Department: ECONOMICS

COURSE: Intermediate Microeconomics II

Month		Topics	Course	Paper
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, Sem IV	Intermediate Microeconomics II
	Tutorials	Market Structure (Monopoly) and _____	B.A (H), Economics, _____	Intermediate Microeconomics ____
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. Varian & Synder & Nicholson.	B.A (H), Economics, Sem IV	Intermediate Microeconomics II
	Tutorials:	Imperfect competition and Exchange	B.A (H), Economics, Sem IV	Intermediate Microeconomics II

MARCH	Theory:	Welfare: Social welfare functions, Arrow's Impossibility Theorem, Paradox of voting, Median Voter Theorem.	B.A (H), Economics, Sem IV	Intermediate Microeconomics II
		Externality: Consumption & production externality, Property Rights and Coase Theorem, Tragedy of Commons. Hal.R. Varain	B.A (H), Economics, Sem IV	Intermediate Microeconomics II
	Tutorials:	Welfare and Externality.	B.A (H), Economics, Sem IV	Intermediate Microeconomics II
	<u>Test 1:</u>	Test-I Monopoly and Game Theory.	B.A (H), Economics, Sem IV	Intermediate Microeconomics II
APRIL	Theory:	Public Goods: definition & classification, efficiency criteria, free riding problem. Hal.R. Varain Asymmetric Information: Market for lemons, Moral hazard, separating and pooling equilibria. Hal.R. Varain	B.A (H), Economics, Sem IV	Intermediate Microeconomics II
	Tutorials:	Public Goods and Asymmetric Information.	B.A (H), Economics, Sem IV	
	<u>Test 2</u>	Exchange and Welfare	B.A (H), Economics, Sem IV	

Semester: IV, Course GE: Public Economics

Month		Topics	Course	Paper
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)	GE, Semester: IV	Public Economics
	Tutorials	Overview of Fiscal Functions	GE, Semester: IV	Public Economics
FEBRUARY	Theory:	Market Failure, Public Goods and Externalities. 1. Joseph E. Stiglitz, Economics of the Public Sector, 3rd Edition, Chapter 4. 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	GE, Semester: IV	Public Economics
	Tutorials:	Market Failure, Public Goods and Externalities Market Failure, Public Goods and Externalities.	GE, Semester: IV	Public Economics
	Test 1	Overview of Fiscal functions and	GE, Semester: IV	Public Economics

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 Edition, Chapter 24 and 25.	GE, Semester: IV	Public Economics
	Tutorials:	Elementary Theories of Product and Factor Taxation and Working of Monetary and Fiscal Policies.	GE, Semester: IV	Public Economics
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 Local Finances.	GE, Semester: IV	Public Economics
	Tutorials:	ISSUES FROM INDIAN PUBLIC FINANCE.	GE, Semester: IV	Public Economics
	Test II	Elementary Theories of Product and Factor Taxation and Working of Monetary and Fiscal Policies.	GE, Semester: IV	Public Economics



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Ankit Joshi

Department: Economics

Semester: II (2019- 20)

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit- 1: IS-LM Analysis Case, Karl E. & Ray C. Fair, Chapter 25	B.A. (P)	Principles of Macroeconomics -II
	Practicals	-		
	Tutorials	Back questions: Case, Karl E. & Ray C. Fair, Chapter 26		
FEBRUARY	Theory:	Unit- 2: GDP & Price Level in short run & long run Case, Karl E. & Ray C. Fair, Chapter 26	B.A. (P)	Principles of Macroeconomics -II
	Practicals:			
	Tutorials:	Discussion on contemporary issues in economics		

	<u>Assignment:</u>	Test: Unit 1		
MARCH	Theory:	Unit-3: Inflation & Unemployment Case, Karl E. & Ray C. Fair, Chapter 27 Economic Survey, Vol 2, Ch-4 & 10	B.A. (P)	Principles of Macroeconomics -II
	Practicals:			
	Tutorials:	Discussion of back questions of unit 2 & 3		
	Test:	Test: Unit 2 & 3		
APRIL	Theory:	Unit-4: Balance of Payment & Exchange Rate Case, Karl E. & Ray C. Fair, Chapter 34 Economic Survey, Vol 2, Ch-6	B.A. (P)	Principles of Macroeconomics -II
	Practicals:			
	Tutorials:	Discussion of past years		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: ANKIT JOSHI

Department: ECONOMICS

Semester : VI (2019-20)

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Unit 1(a): Deterministic Cash Flow Streams David G Luenberger, Chapter 2, 3 & 4	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 David G Luenberger, Chapter 7	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Suggested problem set of Chapter 6 & 7		

	<u>Assignment :</u>	Test: Uni-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 topics		
	<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 Brealy, Myers et al, Chapter 14, 16 & 17	B.A. (Hons.) Economics	Financial Economics
	Practicals:			
	Tutorials:	Discussion of past years		



SEMESTER WISE TEACHING PLAN (2019-20)
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.		

	<u>Test 1:</u>	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. Classes were held online.	B.A. Hons Economics	12271602: Development Economics -II
	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 final exams.		

Semester II, Generic Elective

Month		Topics	Course	Paper Code/Name
January	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.		
February	Theory:	Froyen Ch4 Section 4.1, Blanchard Ch4. Mankiw Ch4 sections 4.2-4.8.	Generic Elective	12275201: Introductory Macroeconomics
	Tutorials:	Student doubts and Past year questions from the topics covered.		

	<u>Test 1:</u>	All topics of first 2 units.		
March	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.		
	<u>Test 2:</u>	All topics of unit 3 and covered topics of unit 4.		
April	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 final exams.		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Amit Kumar Jha

Department: ECONOMICS

SEM: II, B.A. (H) Economics

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Function of several variables Tools for comparative economics Hammond and sydsaeter ch 15,16	B.A. (H) Economics	Mathematical methods for Economics II
	Tutorials	Last year papers, students doubts		
FEBRUARY	Theory:	Multivariable optimization Constrained optimization Hammond and sydsaeter ch 17,18	B.A. (H) Economics	Mathematical methods for Economics II
	Tutorials:	Last year papers, students doubts		
MARCH	Theory:	Linear programming Difference equation Hammond and sydsaeter ch 19, ch 20	B.A. (H) Economics	Mathematical methods for Economics II
	Tutorials:	Last year papers, students doubts		
	<u>Test 1:</u>	On above topics		
APRIL	Theory:	Integration Differential equation Hammond and sydsaeter ch 10, 21	B.A. (H) Economics	Mathematical methods for Economics II

	Test2	Above topic		
	Tutorials:	Last year papers, students doubts		

Semester : VI, B.A. (H) Economics

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	Topic1- Money : Functions, Measurement, Theories of money supply determination Topic 2a- Financial institutions, instruments and financial innovation BAyes and Jansen ch1,5 N jadhav ch 2 Rbi report Mishkin and eakin ch 15 M y khan ch1 Fabozzi ch 1,2	B.A. (H) Economics	Money and Financial markets
	Tutorials	Last year questions, student doubts		
FEBRUARY	Theory:	Topic 2b- money and capital markets, organization, structure and reforms in India, role of financial derivative and other innovation FABozzi et al 26,27,30 My khan ch 9 Bhole ch5	B.A. (H) Economics	Money and Financial markets
	Tutorials	Last year questions, student doubts		
MARCH	Theory:	Topic3- interest rates determination, sources of interest rate differential Topic 4- banking system Sengupta and vardhan Rbi report Rbi bulletin oct 2012 BAyes & jansen ch 10 Rbi report	B.A. (H) Economics	Money and Financial markets
	Tutorials	Last year questions, student doubts		
	Test	Above topics		

APRIL	Theory:	Topic 5- Central banking and monetary policy Bayes & jansen ch 19 Jadhav ch 9'	B.A. (H) Economics	Money and Financial markets
	Tutorials/Pre	Last year questions, student		



SEMESTER WISE TEACHING PLAN (2019-20)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Yogita Yadav

Department: Economics

Semester : IV

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	1. Hypothesis Testing 2. Nature & Scope of Econometrics	B.A (H) Economics	12271403 / Introductory Econometrics
	Practicals			
	Tutorials	Assignment 01		
FEBRUARY	Theory:	1. Simple Linear Regression Model : Two Variable case	B.A (H) Economics	12271403 / Introductory Econometrics
	Practicals:			
	Tutorials:	Assignment 02		

	Test 1	Internal assessment 1 on unit 1,2 & 3		
MARCH	Theory:	1. Multiple Linear Regression Model	B.A (H) Economics	12271403 / Introductory Econometrics
	Practicals:			
	Tutorials:	Assignment 03		
APRIL	Theory:	1. Violation of Classical assumptions : Consequences, Detection & Remedies	B.A (H) Economics	12271403 / Introductory Econometrics
	Practicals:			
	Tutorials:	Assignment 04 & 05		
	Test :	Internal Assessment 02 on unit 4 & 5		

MAY	Theory:	Specification Analysis	B.A (H) Economics	12271403 / Introductory Econometrics
	Practicals:			
	Tutorials:	Assignment		
	Test :	Internal Assessment 2 on Unit 4 & 5		



SRI VENKATESWARA COLLEGE

Name of the Faculty: Yogita Yadav

Department: Economics

Semester : VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	1. Introduction to Macroeconomics 2. National Income accounting	B. Com (Prog)	62275604 / Principles of Macroeconomics
	Practicals			
	Tutorials	Doubts and questions on topics covered		
FEBRUARY	Theory:	1. National Income Accounting 2. Determination of GDP	B. Com (Prog)	62275604 / Principles of Macroeconomics
	Practicals:			
	Tutorials:	Doubts and questions on topics covered		

	<u>Assignment :</u>			
MARCH	Theory:	1. Determination of GDP 2. National Income determination with Government and in an open economy	B. Com (Prog)	62275604 / Principles of Macroeconomics
	Practicals:			
	Tutorials:	Doubts and questions on topics covered		
APRIL	Theory:	1. Money in a modern Economy	B. Com (Prog)	62275604 / Principles of Macroeconomics
	Practicals:			
	Tutorials:	Doubts and questions on topics covered		
	Test :	Internal Assessment 1 on Unit 1,2 & 3		

MAY	Theory:	Revision	B. Com (Prog)	62275604 / Principles of Macroeconomics
	Practicals:			
	Tutorials:	Doubts and questions on topics covered		
	Test :	Internal Assessment 2 on Unit 4 & 5		



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

Name of the Faculty: Rajbir Kaur

Department: History

Semester: IV, VI

Month		Topics	Course	Paper Code/ Name
JANUARY	Theory:	I. (a.) Eighteen Century Debate (b.) India in the mid-eighteenth century: society, economy and polity	B.A. (Hons.) IIInd Year	Core - History of India – VI (c.1750-1857)
	Tutorials:	I. Defining popular culture IV. Festivals, fairs and rituals	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
		Introducing the course and its themes.		
		Discussion		
FEBRUARY	Theory:	II. Expansion and consolidation of colonial power III. Colonial state and ideology: emergence of the Company State	B.A. (Hons.) IIInd Year	Core - History of India – VI (c.1750-1857)
	Tutorials:	III. Folklore and oral traditions of kathas, narratives, legends	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
		Discussion with the tutorial groups on the topics already taken up in the lectures		
	<u>Assignment:</u>	To what extent has the focus on regional studies in recent writings influenced our understanding of the eighteenth century in India?	B.A. (Hons.) IIInd 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 (Online Classes	B.A. (Hons.) IIInd Year	Core - History of India – VI (c.1750-1857)
	Tutorials:	II. Theatre – folk, tales, songs and dances V. Pilgrimage and pilgrim practices	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
		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.	B.A. (Hons.) IIInd Year	Core - History of India – VI (c.1750-1857)
APRIL	Theory:	VI. Cultural changes, social and religious reform movements VII. Popular resistance - 1857	B.A. (Hons.) IIInd Year	Core - History of India – VI (c.1750-1857)
	Tutorials:	VI. Food cultures of India Project presentations	B.A. (Prog.) IIIrd Year	SEC – Popular Culture
		Revision of the courses		
		Discussion on previous year's question papers		



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
COLLEGE**

January-April, 2020

Name of the Faculty: Dr.Ningmuanching

Department: History

Semester: II and IV

Month		Topics	Course	Paper Code/Name
January	Theory:	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
		Caste: Varna and Jati Class, Status and power	B.A Hons. Generic Elective	Inequality and Difference
	Tutorials:			
February	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
		Gender and the Household Forms of bondage: Slavery and Servitude	B.A Hons. Generic Elective	Inequality and Difference
	Tutorials:	Quiz on selected topic	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
		Discussion on selected texts	B.A Hons. Generic Elective	Inequality and Difference
March	Theory:	Feudal Societies in Medieval Europe (8 th to 14 th Centuries)	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
		Race and Colonial Knowledge Tribes and Forest Dwellers	B.A Hons. Generic Elective	Inequality and Difference
		Open book test on selected theme	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World

April	<u>Assignment</u>	Assignment on Political Evolution in Greece	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
		Written assignment submission on gender and the household	B.A Hons. Generic Elective	Inequality and Difference
		Internal Test on selected topics Caste, Class, Race and Colonial Knowledge, Tribes	B.A Hons. Generic Elective	Inequality and Difference
	Theory	Early Islamic Societies in West Asia: Transition from Tribe to State	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World
		Social Distancing and Exclusion; Untouchability Equality and the Indian Constitution	B.A Hons. Generic Elective	Inequality and Difference
	Tutorials:	Discussions and presentations	B.A Hons. Generic Elective	Inequality and Difference
	<u>Mid Term Test</u>	Test on Slavery in Ancient Greece and Rome and Features of Feudalism	B.A Hons. History	Social Formations and Cultural Patterns of the Ancient and Medieval World



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January - May, 2019-2020

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 UNIT I 1. Survey of the sources UNIT II 1. Gupta and The Vakatakas: Administration, state, economy, society, religion and art	B.A. (Honours) I	Core Course III, Paper- History of India-II
			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): <i>Mahajanapadas</i> : Monarchies and <i>Gana/samghas</i> 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	Core Course III, Paper- History of India-II
			B.A. (Programme) I	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	B.A. (Honours) I	Core Course III, Paper- History of India-II
		Discussion of Post-Gupta Developments and the theoretical models of Feudalism, Segmentary State and Integrative Polity. Questions-answer session	B.A. (Programme) I	Core Paper II, Paper-History of India c. 300-1200
	Theory:	UNIT II 1. Mauryan Polity: <i>Dhamma</i> 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	Core Course III, Paper- History of India-II
			B.A. (Programme) I	Core Paper II, Paper-History of India c. 300-1200
MARCH	Practicals:	N/A		



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

January- April 2019-20

Name of the Faculty: NUTI NAMITA

Department: HISTORY

Semester: EVEN SEMESTER

Month		Topics	Course	Paper Code/Name
January	Theory:	1.Delhi before 1857: Company Raj, Mughal Court and Literary Culture	B.A(Hons.) First year (2 nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		1. Transition from Feudalism to Capitalism 2. Crisis of the Tokugawa Bakuhau 3. The Meiji Restoration 4. Economic Change; Agrarian Settlement, Fiscal policies, Industrialization	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 (2 nd 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 Korea
February	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	B.A(Hons.) First year (2 nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		5. Popular Rights Movement 6. Meiji Constitution 7. Japanese Imperialism; Ideology, Expansion and Conflict	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Korea

	Practical:			
	Tutorials:	Question- Answer sessions. Remedial classes for Hindi medium students. quiz	B.A(Hons.) First year (2 nd 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
March	Theory:	5) Making of Contemporary Delhi: Displacement and Resettlement	B.A(Hons.) First year (2 nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		8. Militarism 9. American Occupation of Japan	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 (2 nd 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
	<u>Assignment</u>	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 (2 nd 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

April	Theory	Online classes and circulation of e-resources to the students. Topic V1- Capital Culture; Public Spaces and Socialites	B.A(Hons.) First year (2 nd semester)	GE Course 111: Delhi Through the Ages: From Colonial to Contemporary Times
		Online classes for the students on the History of Modern Korea Circulation of lesson plans and ppts to students through what's app Distribution of e-resources and e books	B.A Hons Third Year. History V1 SEMESTER	DSE-XII History of Modern Japan and Kore
	Practical:			
	Tutorials:			
	<u>Mid Term Test</u>	NA	B.A(Hons.) First year (2 nd semester)	
		NA		
	Practical:			
	Tutorials:			



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

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

Department: History

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-Brahmanical 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.	• The Rise of Modern Science in Relation to the European Society from Renaissance to 17 Century., Mercantilism.		
	2.	• 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	• 17 century Crises/Causes/Historiography/Debate		
		2.	• Non Cooperation and Anti caste Movement		
MARCH	Theory:	1	• Enlightenment Ideas and its Impact • Mercantilism		
		2.	• 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	• Origin of Industrial Revolution –Divergence Debate		
		2.	• Partition • Independence and the New State		

	Practicals:	NA		
	Tutorials:	Question Answer/Discussion		

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



**SEMESTER WISE
TEACHING PLAN
SRI VENKATESWARA
January - May, 2019-2020**

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 19 th and 20 th 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		
	<u>Assignment</u>			
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:			
	<u>Mid Term Test</u>			

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. Shakuntala Meena

Department: Sanskrit

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	SECTION 'A': SUKANASOPADESA	B.A. 1 ST YEAR (P) DSC-2	DSC-2 Sanskrit Prose
		SECTION 'A': HITOPADESA : FIRST TWO STORIES FROM MITRALABHA	B.A. 1 ST YEAR (P) MIL-A1	MIL A1 Sanskrit Literature
		SECTION 'A': INTRODUCTION OF AYURVEDA	B.A. 2 ND YEAR (P) AEEC-3	AEEC-3 Basic Elements of Ayurveda
	Tutorials	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
FEBRUARY	Theory:	SECTION 'B': SIVARAJAVIJAYAM NIHSWASA	B.A. 1 ST YEAR (P) DSC-2	DSC-2 Sanskrit Prose
		SECTION 'B': CANAKYANITI	B.A. 1 ST YEAR (P) MIL-A1	MIL A1 Sanskrit Literature

		SECTION 'B': CARAKA SAMPNHITA	B.A. 2 ND YEAR (P) AEEC-3	AEEC-3 Basic Elements of Ayurveda
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<u>Assignment :</u>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS		
MARCH	Theory:	SECTION 'C': SURVEY OF SANSKRIT LITERATURE: PROSE UNIT I : ORIGIN AND DEVELOPMENT	B.A. 1 ST YEAR (P) DSC-2	DSC-2 Sanskrit Prose
		SECTION 'C': HISTORY OF SANSKRIT PROSE AND NITIKAVAYA UNIT I : ORIGIN AND DEVELOPMENT	B.A. 1 ST YEAR (P) MIL-A1	MIL A1 Sanskrit Literature
		SECTION 'B': CARAKA SAMPNHITA	B.A. 2 ND YEAR (P) AEEC-3	AEEC-3 Basic Elements of Ayurveda
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<u>Test</u>	TESTS WILL BE TAKEN TIMELY		

APRIL	Theory:	SECTION 'C': SURVEY OF SANSKRIT LITERATURE: PROSE UNIT I : PAÑCATANTRA HITOPADESHA	B.A. 1 ST YEAR (P) DSC-2	DSC-2 Sanskrit Prose
		SECTION 'C': HISTORY OF SANSKRIT PROSE AND NITIKAVAYA UNIT II : KATHASARITSAGAR A	B.A. 1 ST YEAR (P) MIL-A1	MIL A1 Sanskrit Literature
		SECTION 'C': TAITTIRIYOPANISAD	B.A. 2 ND YEAR (P) AEEC-3	AEEC-3 Basic Elements of Ayurveda
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		



SEMESTER WISE TEACHING PLAN (2019-2020)
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. 2 ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT I: VIBHAKTYARTHA, VOICE AND KRT	B.A. 3 RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
	Tutorials	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
FEBRUARY	Theory:	UNIT II: GADYA AND RUPAKA	B.A. 2 ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT II: SELECTIONS FROM KRT PRAKARANA	B.A. 3 RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

	<u>Assignment :</u>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS.		
MARCH	Theory:	UNIT III: GITIKAVYA	B.A. 2 ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT IV: OTHER GENRES		
	Tutorials:	UNIT III: TRANSLATION AND COMMUNICATION	B.A. 3 RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION
		UNIT IV: COMMUNICATIVE SANSKRIT		
	<u>Test</u>	TESTS WILL BE TAKEN TIMELY.		
APRIL	Theory: (TOPICS WILL BE TAUGHT USING WHATSAPP)	UNIT V AND VI: GENERAL SURVEY	B.A. 2 ND YEAR (H)	C-9 MODERN SANSKRIT LITERATURE
		UNIT V: ESSAY (TRADITIONAL SUBJECTS) UNIT VI: ESSAY (MODERN SUBJECTS)	B.A. 3 RD YEAR (H)	C-14 SANSKRIT COMPOSITION AND COMMUNICATION



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

Name of the Faculty: Dr. Raj Kishor Arya

Department: Sanskrit

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
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JANUARY 2020	Theory	SECTION-A Unit: I Survey of Sanskrit Literature in the World:	B.A (H)2 nd year	C-10 Sanskrit and World Literature (12131403)
		Section 'A' Fundamentals of Philosophy Unit: I	B.A (H)2 nd year GE-6	GE-6 Fundamentals of Indian Philosophy (12135906)
FEBRUAR Y 2020	Theory:	SECTION-B Unit: II Upaniads and Gt in the West: Unit: III Sanskrit Fables in World Literature:	B.A (H)2 nd year	C-10 Sanskrit and World Literature (12131403)
		SECTION-B Unit: II Salient features of Indian Philosophy Heterodox Schools Unit – I Unit – II Orthodox Schools of Philosophy	B.A (H)2 nd year GE-6	GE-6 Fundamentals of Indian Philosophy (12135906)
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

	<u>Assignment :</u>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS		
MARCH 2020	Theory:	SECTION-C Unit: IV Rmyaa and Mahbhrata in South East Asia: Unit: V Klidsa in the West:	B.A (H)2 nd year	C-10 Sanskrit and World Literature (12131403)
		SECTION-C Unit: III Nyya Vaiesika - General Introduction with emphasis on Tarksamgrah Unit: IV Advaita Vednta	B.A (H)2 nd year GE-6	GE-6 Fundamentals of Indian Philosophy (12135906)
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<u>Test</u>	TESTS WILL BE TAKEN TIMELY		
APRIL 2020	Theory:	SECTION-D Unit: VI Sanskrit Studies across the World:	B.A (H)2 nd year	C-10 Sanskrit and World Literature (12131403)
		SECTION-D Unit: V Mms - Svata Prmyavda Unit – I Epistemology : Six Pramanas Unit – II Metaphysics: Realism, Idealism, Causation Unit – III Ethics: Karma & Punarjanma theory, Liberation	B.A (H)2 nd year GE-6	GE-6 Fundamentals of Indian Philosophy (12135906)

	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
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SEMESTER WISE TEACHING PLAN (2019-2020)
SRI VENKATESWARA COLLEGE

Name of the Faculty: Dr. Sunita Atal

Department: Sanskrit

Semester: II/IV/VI

Month		Topics	Course	Paper Code/Name
JANUARY	Theory	SECTION-A UNIT-1 SCIENCE OF INQUIRY	B.A.(H)3 rd year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-A INTRODUCTION TO INDIAN MEDICINE SYSTEM AYURVEDA	B.A. 2 ND YEAR GE	BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM
	Tutorials	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
FEBRUARY	Theory:	SECTION-A UNIT-2 METHOD OF DEBATE TYPES OF DEBATE	B.A.(H)3 rd year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-B BASIC PRINCIPLES OF AYURVEDA	B.A. 2 ND YEAR GE	BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		

	<u>Assignment :</u>	ASSIGNMENTS WILL BE GIVEN REGARDING THE TOPICS		
MARCH		SECTION-C UNIT-1 THEORY OF DEBATE	B.A.(H)3 rd year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-C DIETICS, NUTRITION AND TREATMENTS IN AYURVEDA	B.A. 2 ND YEAR GE	BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		
	<u>Test</u>	TESTS WILL BE TAKEN TIMELY		
APRIL	Theory:	SECTION-C UNIT-2 THEORY OF DEBATE	B.A.(H)3 rd year	INDIAN SYSTEM OF LOGIC AND DEBATE
		SECTION-C DIETICS, NUTRITION AND TREATMENTS IN AYURVEDA	B.A. 2 ND YEAR GE	BASIC PRINCIPLES OF INDIAN MEDICINE SYSTEM
	Tutorials:	TUTORIALS REGARDING THE TOPICS WILL BE TAKEN.		



SEMESTER WISE TEACHING PLAN **SRI VENKATESWARA COLLEGE**

Jan.,- April 2020

Name of the Faculty: Dr. M. V. R. Prasada Rao

Department: Statistics

Semester: IV, VI

Month		Topics	Course	Paper Code/Name
January	Theory:	Estimation: Concepts of estimation, unbiasedness, sufficiency, consistency and efficiency.	Bachelor of Statistics (Hons.)	STAT-C-401 Statistical Inference
		Sequential Analysis: Sequential probability ratio test (SPRT) for simple vs simple hypotheses. Fundamental relations among α , β , A and B, determination of A and B in practice.		STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Practicals:	Based on estimation, Cramer-Rao inequality and MVB estimators		
	Tutorials:			
February	Theory:	Factorization theorem. Complete statistic, Minimum variance unbiased estimator (MVUE), Rao-Blackwell and Lehmann-Scheffe theorems and their applications. Cramer-Rao inequality and MVB estimators(statement and applications)	Bachelor of Statistics (Hons.)	STAT-C-401 Statistical Inference
		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.		STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Practicals:	Based on Methods of Estimation		
	Assignment :	Methods of Estimation and Concepts of estimation		
March	Theory:	Methods of Estimation: Method of moments, method of maximum likelihood estimation, method of minimum Chi-square, basic idea of Bayes estimators. Principles of test of significance: Null and alternative hypotheses	Bachelor of Statistics (Hons.)	STAT-C-401 Statistical Inference

		Nonparametric Tests: Introduction and Concept, Test for randomness based on total number of runs,		STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Practicals:	Based on , most powerful test, uniformly most powerful test and Likelihood ratio test		
	Tutorials:			
		<u>Mid Term Test-</u> Unit-I, Unit-II and Unit-III		
April	Theory	Type-I and Type-II errors, critical region, level of significance, size and power, best critical region, most powerful test, uniformly most powerful test, Neyman Pearson Lemma (statement and applications to construct most powerful test). Likelihood ratio test, properties of likelihood ratio tests	Bachelor of Statistics (Hons.)	STAT-C-401 Statistical Inference
		Empirical distribution function, Kolmogorov Smirnov test for one sample, Sign tests- one sample and two samples, Wilcoxon-Mann-Whitney test, Kruskal-Wallis test.		STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Practicals:	Based on Interval estimation, Confidence interval		
	Tutorials:	Discussion and revision		



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

Name of Faculty: Dr. Veena Budhரா
Semester: II, IV, VI

Department: Statistics

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 of X-bar and s chart	B.A. (Programme)	DSE1-(i): 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 complementary BIBD, Residual BIBD, Dual BIBD, Derived BIBD.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments

March				
	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			
	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^n Factorial Designs - Standard order for treatment combinations, Main effects and interactions, Yates' Algorithm Design and analysis ($n=2$), Total and Partial confounding- Confounding $2n$ ($n \leq 5$) in two blocks and four blocks, Confounding the $3n$ ($n \leq 3$) in three blocks, identification of the confounded effects for both, 2^n ($n \leq 5$) and 3^n ($n \leq 3$) factorial designs.	B.Sc. (H) Statistics	STAT-C-601: Design of Experiments
	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 ($n \leq 5$).	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 -2019-20

Name of the Faculty: Dr. M.K. Sukla

Department: Statistics

Semester : II/IV/VI

Month		Topics	Course	Paper
JANUARY	Theory	Statement of the fundamental theorem of algebra and its consequences. Relation between roots and coefficients of any polynomial equations, Solutions of cubic and biquadratic equations when some conditions on roots of equations are given. Evaluation of the symmetric polynomials and roots of cubic and biquadratic equations.	B.Sc. (H) Statistics	STAT C-202 Algebra
		General Linear Model-Definition, representations and classification, Estimability, Gauss Markov Theorem, Estimation of error variance Concepts of linear parametric functions, estimable functions, Conditions of estimability, Gauss Markov Theorem (for full rank and non-full rank cases) with proof, Concept of number of linearly independent functions, Distribution of Quadratic forms; Cochran's Theorem and associated theorems with proof	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:	Review of algebra of matrices, theorems related to triangular, symmetric and skew symmetric matrices, idempotent matrices, Hermitian and skew Hermitian matrices, orthogonal matrices, singular and non-singular matrices and their properties. Trace of a matrix, unitary, involutory and nilpotent matrices	B.Sc. (H) Statistics	STAT C-202 Algebra
		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:	Finding inverse using Cayley Hamilton theorem, For a real Skew Symmetric matrix S, show that matrix A defined by $(I-S)(I+S)^{-1}$ is an orthogonal matrix, Reducing a Quadratic Form to its canonical form and finding its rank and index	B.Sc. (H) Statistics	STAT C-202 Algebra
		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:			

MARCH	Assignment	Will be based on unsolved problems covered before midterm break	B.Sc. (H) Statistics	STAT C-202 Algebra
			B.Sc. (H) Statistics	STAT C-402 Linear Models
	Theory:	Adjoint and inverse of a matrix and related properties.	B.Sc. (H) Statistics	STAT C-202 Algebra
		Prediction from a fitted model, Bias in regression estimates, Analysis of Variance and Covariance-Definition of fixed, random and mixed effect models, of Variance under Fixed effects model for one way classified data and two way classified data with equal number of	B.Sc. (H) Statistics	STAT C-402 Linear Models
	Practicals:	Reducing a Quadratic Form to its canonical form and finding its rank and index, Proving that a quadratic form is positive or negative definite, Finding the product of two matrices by considering partitioned matrices, Finding inverse of a matrix by partitioning, Finding Generalized Inverse of a matrix and symmetric generalized inverse of a	B.Sc. (H) Statistics	STAT C-202 Algebra
		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
	Test	Will be based on Units covered before mid term break	B.Sc. (H) Statistics	STAT C-202 Algebra
	Tutorials:		B.Sc. (H) Statistics	STAT C-402 Linear
APRIL	Theory:	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. Use of determinants in solution to the system of linear equations.	B.Sc. (H) Statistics	STAT C-202 Algebra
		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:	Find XX' for any X of order $n \times k$, where G is generalized inverse and show that XX' is invariant with respect to G, To find whether a given set of vectors is linearly dependent or linearly independent, Constructing an Orthonormal Basis using Gram Schmidt Orthogonalization Process.	B.Sc. (H) Statistics	STAT C-202 Algebra
		Residual Analysis, Orthogonal Polynomials.	B.Sc. (H) Statistics	STAT C-402 Linear



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
January to May 2020

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
		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. Evaluation of the symmetric polynomials and roots of cubic and biquadratic	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 option price.	B. Sc.(H) Statistics Sem - VI	STAT-DSE-4(A): Financial Statistics

		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 $A = (I_n - X(X^T X)^{-1}X^T)$ is idempotent. Also, determine its rank and characteristic root. . Symmetric Determinants	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials:			

	<u>Assignment</u>	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 their solutions; Itô's lemma.	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
	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:			
	<u>Test</u>	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
		Vector Spaces Linear Independence and Linear Dependence of Vectors , Concept of a Basis. orthogonal transformation and their digitalization Quadratic forms, Canonical Forms, Rank and Nullity and Index	B. Sc.(H) Statistics Sem - II	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
		Reducing a Quadratic Form to its canonical form and finding its rank and index. Proving that a quadratic form is positive or negative definite.	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
		Revision of Practicals.	B. Sc.(H) Statistics Sem - II	STAT C-202: Algebra
	Tutorials:			



SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
 Even Semester -2019-20

Name of the Faculty: Dr. Dipika
II,IV, VI

Department: Statistics

Semester:

Month		Topics	Course	Paper Code/Name
JANUAR Y	Theory	Probability: Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability – classical, statistical, and axiomatic.	Generic Elective	STAT-GE-2: Introductory Probability
		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	Fitting of binomial distributions for n and $p = q = \frac{1}{2}$ given, Fitting of binomial distributions for n and p given, Fitting of binomial distributions computing mean and variance.	Generic Elective	STAT-GE-2: Introductory Probability
		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
	Tutorials			
February	Theory	Conditional Probability, laws of addition and multiplication, independent events, theorem of total probability.	Generic Elective	STAT-GE-2: Introductory Probability
		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 modified minimum Chi-square methods.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Practicals	Fitting of Poisson distributions for given value of λ , Fitting of Poisson distributions after computing mean, Application problems based on binomial distribution, and Application problems based on Poisson distribution.	Generic Elective	STAT-GE-2: Introductory Probability
		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
	Tutorials			

March	Theory	Bayes' theorem and its applications, Random Variables: Discrete and continuous random variables	Generic Elective	STAT-GE-2: Introductory Probability
		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	Problems based on area property of normal distribution, To find the ordinate for a given area for normal distribution.	Generic Elective	STAT-GE-2: Introductory Probability
		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 method.	B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
	Tutorials			
	<u>Assignment</u>	Unsolved problems from theory.	Generic Elective	STAT-GE-2: Introductory Probability
		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
	<u>Test</u>	Test will be based on Course Covered before midterm break	Generic Elective	STAT-GE-2: Introductory Probability
			B.Sc.(H) Statistics	STAT-C-402: Linear Models
			B.Sc.(H) Statistics	STAT-DSE-3(B): Biostatistics and Survival Analysis
April	Theory	pmf, pdf, cdf. Illustrations of random variables and its properties, Expectation, variance, moments and moment generating function.	Generic Elective	STAT-GE-2: Introductory Probability
		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	Application based problems using normal distribution, Fitting of normal distribution when parameters are given, Fitting of normal distribution when parameters are not given.	Generic Elective	STAT-GE-2: Introductory Probability
		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



SRI VENKATESWARA COLLEGE
SEMESTER WISE TEACHING PLAN
2019-20

Name of the Faculty: Dr. Alok Kumar Singh

Department: Statistics

Semester: 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:	--		
February	Theory:	Rational Sub-grouping, Revised and Modified Control Limits. Control charts for attributes: np-chart, p-chart, c-chart and u-chart. 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	B.Sc. (Hons) Statistics	STAT-C-403: Statistical Quality Control
		Introduction to Demographic Methods, measurement of population, rates and ratios of vital events. Measurement of mortality: Crude Death Rate, Specific Death Rate.	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. 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	
	Tutorials:	Computation of measures of mortality. Computation of measures of fertility and population growth.	GE-IV	
	<u>Assignment</u>	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:			



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE**

Jan.-April, 2020

Name of the Faculty: Dr. Ramesh Kumar

Department: Statistics

Semester: IV & VI

Month		Topics	Course	Paper Code/Name
January	Theory:	Bivariate Normal Distribution (BVN): p.d.f. of BVN,	Bachelor of Statistics (Hons.)	STAT-C-602 Multivariate Analysis and Nonparametric Methods STAT-C-401 Statistical Inference GE-IV Applied Statistics STAT- SEC-1: Data Analysis Using Software Packages (SPSS)
		Methods of Estimation: Method of moments, :Method of maximum likelihood		
		Economic Time Series: 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		
	Practicals:	Practical based on Bivariate Normal Distribution (BVN), marginal and conditional p.d.f. of BVN, Practical based on Method of moments, :Method of maximum likelihood estimation. Draw histogram for equal/unequal width class interval, Stem and Leaf plot, Box plot frequency polygon, pie chart, bar graphs, line charts, Ogive		
	Tutorials:	Discuss problems related to theory		
February	Theory:	Properties of BVN, marginal and conditional p.d.f. of BVN. Methods of Estimation: Method of minimum Chi-square, basic idea of Bayes estimators method of semi-averages and method of least squares (linear, quadratic and modified exponential). Measurement of seasonal variations by method of ratio to trend.	Bachelor of Statistics (Hons.)	STAT-C-602 Multivariate Analysis and Nonparametric Methods STAT-C-401 Statistical Inference GE-IV Applied Statistics
	Practicals:	Principal Components Analysis and Factor		

		Analysis		
		Practical based on Bivariate Normal Distribution (BVN), marginal and conditional p.d.f. of BVN Practical based on Method of minimum Chi-square. Compute descriptive statistics for raw data and grouped data and interpret by computing coefficient of variation, skewness and kurtosis		STAT- SEC-1: Data Analysis Using Software Packages (SPSS)
March	Theory:	Multivariate Normal distribution and its properties. Sampling distribution for mean vector and variance- covariance matrix		STAT-C-602 Multivariate Analysis and Nonparametric Methods
		Interval estimation - Confidence interval for the parameters of various distributions, Confidence interval for Binomial proportion. Demographic Methods: Introduction, measurement of population, rates and ratios of vital events. Measurement of mortality	Bachelor of Statistics (Hons.)	STAT-C-401 Statistical Inference GE-IV Applied Statistics Data Analysis Using Software Packages (SPSS)
	Practicals:	Practical based on Multivariate Normal distribution Practical based on Confidence interval for the parameters of various distributions, Calculate correlation coefficient (Karl Pearson), Spearman's rank correlation coefficient, Multiple and Partial correlation coefficient and fitting of two lines of regression and their plot		
	<u>Assignment</u>	Assignment related to Bivariate Normal Distribution and Multivariate Normal distribution		STAT-C-602 Multivariate Analysis and Nonparametric Methods
		<u>Mid Term Test</u> based on Unit-I and Unit-II		
April	Theory	Multiple and partial correlation coefficient and their properties. Introduction to Discriminant Analysis, Principal Components Analysis and Factor Analysis	Bachelor of Statistics (Hons.)	STAT-C-602 Multivariate Analysis and Nonparametric Methods
		Confidence interval for population correlation coefficient for Bivariate Normal distribution, Pivotal quantity method of constructing confidence interval, Large sample confidence intervals.		STAT-C-401 Statistical Inference

	CDR, SDR (w.r.t. Age and sex), IMR, Standardized death rates. Life (mortality) tables: definition of its main functions and uses. Measurement of fertility and reproduction: CBR, GFR, and TFR. Measurement of population growth: GRR, NRR.		GE-IV Applied Statistics
Practicals:	Practical based on , Principal Components Analysis and Factor Analysis Practical based on Confidence interval		STAT-C-602 Multivariate Analysis and Nonparametric Methods
	Practical based on Confidence interval		STAT-C-401 Statistical Inference



**SEMESTER WISE TEACHING PLAN
SRI VENKATESWARA COLLEGE
EVEN SEMESTER 2019-2020**

Name of the Faculty: Dr. Tanuja Sriwastava

Department: Statistics

Semester: II, IV

Month		Topic	Course	Paper Code/ Name
January	Theory	Convergence in probability, almost sure convergence, Chebyshev's inequality.	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		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 I)	STAT-GE-4, Applied Statistics
	Practical	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	STAT-GE-2, Introductory Probability
		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 I)	STAT-GE-4, Applied Statistics
		1. Estimability when X is a full rank matrix and not a full rank matrix 2. Distribution of Quadratic forms 3. Simple Linear Regression	B.Sc. (H) Statistics, Semester IV	STAT-C-402 Linear Models
	Tutorials			
February	Theory	weak law of large numbers, De-Moivre Laplace and Lindeberg-Levy Central Limit Theorem (C.L.T.).	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		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 I)	STAT-GE-4, Applied Statistics
	Practical	4. Fitting of Poisson distributions for given value of lambda 5. Fitting of Poisson distributions after computing mean 6. Application problems based on binomial distribution	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		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 I)	STAT-GE-4, Applied Statistics
		4. Multiple Regression 5. Tests for Linear Hypothesis 6. Bias in regression estimates	B.Sc. (H) Statistics, Semester IV	STAT-C-402 Linear Models
	Tutorials			
March	Theory	Binomial, Poisson, geometric and negative binomial distributions	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability

		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 I)	STAT-GE-4, Applied Statistics
	Practical	7. Application problems based on Poisson distribution 8. Problems based on area property of normal distribution	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		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 I)	STAT-GE-4, Applied Statistics
		7. Lack of fit 8. Orthogonal Polynomials	B.Sc. (H) Statistics, Semester IV	STAT-C-402 Linear Models
	Tutorials			
April	Theory	Hypergeometric, uniform, normal and exponential Distributions.	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		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 I)	STAT-GE-4, Applied Statistics
	Practical	9. To find the ordinate for a given area for normal distribution. 10. Application based problems using normal distribution 11. Fitting of normal distribution when parameters are given	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		7. Computation of measures of mortality 8. Completion of life table	B.Sc. (H) Statistics, Semester IV (Batch I)	STAT-GE-4, Applied Statistics
		9. Analysis of Variance of a one way classified data 10. Analysis of Variance of a two way classified data with one observation per cell 11. Analysis of Covariance of a one way classified data	B.Sc. (H) Statistics, Semester IV	STAT-C-402 Linear Models
	Tutorials			
May	Theory	Beta and Gamma Distributions.	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		Measurement of fertility and reproduction: CBR, GFR, and TFR. Measurement of population growth: GRR, NRR.	B.Sc. (H) Statistics, Semester IV (Batch I)	STAT-GE-4, Applied Statistics
	Practical	12. Fitting of normal distribution when parameters are not given	B.Sc. (H) Statistics, Semester II	STAT-GE-2, Introductory Probability
		9. Computation of measures of fertility and population growth	B.Sc. (H) Statistics, Semester IV (Batch I)	STAT-GE-4, Applied Statistics
		12. Analysis of Covariance of a two way classified data	B.Sc. (H) Statistics, Semester IV	STAT-C-402 Linear Models
	Tutorials			



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

Teacher Name: Dr Chetan

Department: Statistics

Semester: Even Semester (Semester II)

Month		Topics	Course	Paper Code/Name
Jan.	Theory	--	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Practical	--	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Theory	--	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	---	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Tutorials	--	--	--
Feb.	Theory	Variance and covariance of random variables and their properties, Conditional expectations. Bivariate transformations with illustrations. Moments, moment generating function and its properties. Cumulants, cumulant generating function and its properties. Characteristic function and its properties.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Practical	--	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Assignment	Assignment was given on different	B.Sc.	STAT-C-201

		topics related with curriculum to each student.	(Hons.) Statistics	Probability and Probability Distributions
	Theory	Probability: 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. (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
Mar.	Theory	Inversion theorem for continuous random variables along with applications. Uniform, Binomial, Poisson, Geometric, Negative Binomial and Hyper-geometric distributions along with their characteristic properties and limiting/ approximation cases.	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. Application problems based on Poisson distribution.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Test	The test was conducted on the first two units (some topics) of the curriculum.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Theory	Discrete and continuous random variables, pmf, pdf, cdf. Illustrations of random variables and its properties. Expectation, variance, moments and moment generating function.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	--	B.Sc. (Hons.)	Generic Elective

			Statistics	Paper: Introductory Probability
	Tutorials	--	--	--
	Test	The test was conducted on the first two units (some topics) of the curriculum.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
Apr.	Theory	Normal, Exponential, Uniform, Beta, Gamma, Cauchy distributions along with their characteristic properties and limiting/ approximation cases.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Practical	Fitting of negative binomial distribution. Application problems based on negative binomial distribution. Fitting of suitable distribution.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Tutorials	--	--	--
	Theory	Binomial, Poisson, geometric, negative binomial, hyper geometric, uniform, normal, exponential, beta, gamma.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	Fitting of binomial distributions for n and p = q = $\frac{1}{2}$ given. Fitting of binomial distributions for n and p given. Fitting of binomial distributions computing mean and variance. Fitting of Poisson distributions for given value of lambda. Fitting of Poisson distributions after computing mean. Application problems based on binomial distribution.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Tutorials	--	--	--
May	Theory	Lognormal and Laplace distributions along with their characteristic properties and limiting/ approximation cases.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions
	Practical	Fitting of normal distribution. To find the ordinate for a given area for normal distribution. Problems based on area property of normal distribution. Application based problems using normal distribution.	B.Sc. (Hons.) Statistics	STAT-C-201 Probability and Probability Distributions

	Tutorials	--	--	--
	Theory	Convergence in probability, almost sure convergence, Chebyshev's inequality, weak law of large numbers, De-Moivre Laplace and Lindeberg-Levy Central Limit Theorem.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Practical	Application problems based on Poisson distribution. Problems based on area property of normal distribution. To find the ordinate for a given area for normal distribution. Application based problems using normal distribution. Fitting of normal distribution when parameters are given. Fitting of normal distribution when parameters are not given.	B.Sc. (Hons.) Statistics	Generic Elective Paper: Introductory Probability
	Tutorials	--	--	--