I – Academic Planner

Teaching Plan (Year : 2020   Semester: odd)

Teacher's Name : Bharti Yadav   Department: Mathematics

Sl. No.	UPC	Paper Name	Core/AECC/ GE-/SEC	Topic/Unit	Start Date	End Date
1	32355345	Linear Programming and Game Theory	GE-3	Definition and mathematical formulation of Transportation problem, Methods of finding initial basic feasible solutions, North West corner rule, Least-cost method, Vogel's approximation method, Algorithm for solving Transportation problem. Mathematical formulation and Hungarian method of solving Assignment problem	21/08/2020	21/09/2020
	32355345	Linear Programming and Game Theory	GE-3	Introduction to Linear Programming Problem: Graphical method of solution, Basic Feasible Solutions, Linear programming and convexity. Introduction to the Simplex method: Theory of the Simplex method, Optimality and unboundedness. The Simplex tableau and examples, Artificial variables.	22/09/2020	5/10/2020
	32355345	Linear Programming and Game Theory	GE-3	Introduction to Game theory, Formulation of two-person, Zero-sum rectangular game, Solution of rectangular games with saddle point. Mixed strategies, Dominance principle, Rectangular games without saddle points, Graphical and linear programming solution of rectangular games.	15/10/2020	12/11/2020

2	32353301	LaTeX and HTML	SEC-1	Introduction to TeX and LaTeX, Typesetting a simple document, Adding basic information to a document, Environments, Footnotes, Sectioning and displayed material.	21/08/2020	21/09/2019
	32353301	LaTeX and HTML	SEC-1	Accents of symbols, Mathematical typesetting (elementary and advanced): Subscript/Superscript, Fractions, Roots, Ellipsis, Mathematical symbols, Arrays, Delimiters, Multiline formulas, Spacing and changing style in math mode. Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions.	22/09/2020	5/10/2020
	32353301	LaTeX and HTML	SEC-1	Beamer presentation, HTML basics, Creating simple web pages. Adding images and links, Design of web pages.	15/10/2020	12/11/2020
3	42351101	Calculus and Matrices	Core	Elementary linear transformations like shear, translation, dilation, rotation, refection, and their matrix form, The matrix of a general linear transformation. : Eigenvectors & eigenvalues of square matrices up to order 3 and diagonalization.	18/11/2020	18/12/2020
	42351101	Calculus and Matrices	Core	Graphs of simple basic functions such as: Polynomial, Trigonometric, Inverse trigonometric, Exponential and logarithmic functions; Limits and continuity of a function including epsilon delta approach, Properties of continuous functions including Intermediate value theorem;Differentiability, Successive differentiation, Leibnitz theorem, Recursion formulae for higher derivatives. Taylor's theorem, Taylor's series and Maclaurin's series, Maclaurin's expansion of functions such as $e^s, \sin x, \cos x, \log(1+x)$ and $(1+x)^N$; their use in polynomial approximation and error estimation.	20/12/2020	1/2/2021
	42351101	Calculus and Matrices	Core3	Geometrical representation of addition, subtraction, multiplication and division of complex numbers; Lines, Circles, Discs in terms of complex variables; Statement of the Fundamental theorem of algebra and its consequences; De Moivre's theorem and its application to solve simple equations in complex variables.	3/2/2021	2/3/2021

A. Outstation Field visits for students

Project Name / Paper Name			
Destination		Travel Mode	
Departure Month		Return	
Faculty-in-Charge		Number of Students going	

B. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
	BSc(h) chemistry III semester	32355345	Introduction to Linear Programming Problem: Graphical method of solution, Basic Feasible Solutions, Linear programming and convexity. Introduction to the Simplex method: Theory of the Simplex method, Optimality and unboundedness.	5/11/2020	
	Bsc(P) I semster	42351101	Elementary linear transformations like shear, translation, dilation, rotation, refection, and their matrix form, The matrix of a general linear transformation. : Eigenvectors & eigenvalues of square matrices up to order 3 and diagonalization	5/3/2021	
	BSc(h) mathematics III semester	32353301	Accents of symbols, Mathematical typesetting (elementary and advanced): Subscript/Superscript, Fractions, Roots, Ellipsis, Mathematical symbols, Arrays, Delimiters, Multiline formulas, Spacing and	17/11/2020	

			changing style in math mode. Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions		

*Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester

I – Academic Planner

Teaching Plan (Year : 2021   Semester: even)

Teacher's Name : Bharti Yadav   Department: Mathematics

Sl. No.	UPC	Paper Name	Core/A ECC/ GE - /SEC	Topic/Unit	Start Date	End Date
1	32355444	Elements of Analysis	GE-4	Finite and infinite sets examples of countable and uncountable sets. Real line; absolute value bounded sets suprema and infima, statement of order Completeness property of R, Archimedean property of R, intervals. Real sequences, Convergence, sum and product of convergent sequences, proof of convergence of some simple sequences such as $(-1)^n/n$, $1/n^2$, $(1+1/n)^n$, x^n with $|x|<1$, a_n /n, where an is a bounded sequence. Concept of cluster points and statement of Bolzano Weierstrass' theorem. Statement and illustration of Cauchy convergence criterion for sequences. Cauchy's theorem on limits, order preservation and squeeze theorem, monotone sequences and their convergence	1/01/2021	21/02/2021
	32355444	Elements of Analysis	GE-4	Definition and a necessary condition for convergence of an infinite series. Cauchy convergence criterion for series, positive term series, geometric series, comparison test, limit comparison test, convergence of p-series, Root test, Ratio test, alternating series, Leibnitz's test. Definition and examples of absolute and conditional convergemce.	22/02/2021	20/03/2021
	32355444	Elements of Analysis	GE-4	Definition of power series: radius of convergence, Cauchy-Hadamard theorem, statement and illustration of term-by-term differentiation and integration of power series. Power series expansions for exp(x), sin(x), cos(x), log(1+x) and their properties	1/04/2021	22/04/2021

2	32353401	Computer algebra System and Related software	SEC	Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Producing tables of values, Working with piecewise defined functions, Combining graphics. Simple programming in a CAS. Plotting parametric curves surfaces, Customizing plots, Animating plots. Plotting functions of two variables using Plot3D and contour plot	1/01/2021	2/02/2021
	32353401	Computer algebra System and Related software	SEC	Working with matrices, Performing Gauss elimination, Operations (Transpose, Determinant, Inverse), Minors and cofactors, Working with large matrices, Solving system of linear equations, Rank and nullity of a matrix, Eigenvalue, Eigenvector and diagonalization., Introducing **R**, using **R** as a calculator; Explore data and relationships in **R**, Reading and getting data into **R**: Combine and scan commands, viewing named objects and removing objects from **R**, Types and structures of data items with their properties, Working with history commands, Saving work in **R**.	3/02/2021	20/03/2021
	32353401	Computer algebra System and Related software	SEC	Manipulating vectors, Data frames, Matrices and lists; Viewing objects within objects, Constructing data objects and their conversions, Summary commands: Summary statistics for vectors, Data frames, Matrices and lists; Summary tables. Stem and leaf plot, Histograms, Density function and its plotting. Plotting in **R**: Box-whisker plots, Scatter plots, Pairs plots, Line charts, Pie charts, Cleveland dot charts, Bar charts; Copy and save graphics to other applications	1/04/2021	20/04/2021
3	42353405	Mathematical typesetting LaTeX	SEC	Introduction to TeX and LaTeX, Typesetting a simple document, Adding basic information to a document, Environments, Footnotes, Sectioning and displayed material.	2/01/2021	3/03/2021
	42353405	Mathematical typesetting LaTeX	SEC	Accents of symbols, Mathematical typesetting (elementary and advanced): Subscript/Superscript, Fractions, Roots, Ellipsis, Mathematical symbols, Arrays, Delimiters, Multiline formulas, Spacing and changing style in math mode. Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions.	4/03/2021	15/04/2021

A. Outstation Field visits for students

Project Name / Paper Name			
Destination		**Travel Mode**	
Departure Month		**Return**	
Faculty-in-Charge		**Number of Students going**	

B. Internal Assessment: House Exam (Test/Presentation etc.) & Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
	BSc(h) physics IV semester	32355444	Definition and a necessary condition for convergence of an infinite series. Cauchy convergence criterion for series, positive term series, geometric series, comparison test, limit comparison test, convergence of p-series, Root test, Ratio test, alternating series, Leibnitz's test. Definition and examples of absolute and conditional convergemce.	12/04/2021	
	BSc(P) IV semester	42353405	Accents of symbols, Mathematical typesetting (elementary and advanced): Subscript/Superscript, Fractions, Roots, Ellipsis, Mathematical symbols, Arrays, Delimiters, Multiline formulas, Spacing and	5/04/2021	

			changing style in math mode. Graphics in LaTeX, Simple pictures using PSTricks, Plotting of functions		
BSc(h) mathematics IV semester	32353401		Computer Algebra System (CAS), Use of a CAS as a calculator, Computing and plotting functions in 2D, Producing tables of values, Working with piecewise defined functions, Combining graphics. Simple programming in a CAS. Plotting parametric curves surfaces, Customizing plots, Animating plots. Plotting functions of two variables using Plot3D and contour plot	17/04/2021	

*Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester