

E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE
An Autonomous Institution -Affiliated to Madurai Kamaraj University
Re-accredited (3rd Cycle) with Grade A+ & CGPA 3.51 by NAAC



LESSON PLAN

2021-2022

DEPARTMENT OF MATHEMATICS

(UG & PG – Odd & Even Semester)

- 1) B.Sc. Regular (I, II & III Year)
- 2) B.Sc. Self Finance (I, II & III Year)
- 3) M.Sc. Mathematics (I & II Year)



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DEPARTMENT OF MATHEMATICS
I - B.SC MATHEMATICS (REGULAR)

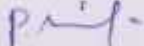
LESSON PLAN
2021-2022

Sub. Code : 21MI1

Title of the Paper: Calculus

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Envelopes-Curvature-Circle, Radius and Centre of Curvature-The coordinate of the centre of Curvature-Evolutes and involutes	15	Google Classroom & Google Meet	A. Maniyal
Sep	II	Radius of Curvature in Polar Co-ordinates p-r equations-Pedal Equations of curves-Maxima & Minima of function of two variables.	15	Google Classroom & Google Meet	A. Maniyal
Oct	III	Evaluation of definite Integrals, Reduction formulae.	15	Google Classroom & Google Meet	A. Maniyal
Nov	IV	Beta and Gamma functions	15	Google Classroom & Google Meet	A. Maniyal
Dec/Jan	V	Double integrals-Evaluation of Double-Triple integrals-change of variables in double and Triple integrals.	15	Google Classroom & Google Meet	A. Maniyal


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I - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 21M12

Title of the Paper: Theory of Equation and Number system

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	An equation with real coefficients, rational coefficients - Relation between the roots and coefficients of equations.	15	Google Classroom & Google Meet	R.R. Subbinga
Sep	II	Symmetric function of the roots-Sum of the power of the roots of an Equation-Newton's Theorem on the sum of the power of the roots - Transformations of Equations - Reciprocal Equations.	15	Google Classroom & Google Meet	R.R. Subbinga
Oct	III	To increase or decrease the roots of a given equation by a given quantity-Removal of terms - Transformation in general.	15	Google Classroom & Google Meet	R.R. Subbinga
Nov	IV	Descarte's rule of signs - Rolle's Theorem - Multiple roots - General	15	Google Classroom & Google Meet	R.R. Subbinga

		solution of the cubic equation: Cardon's method. (Only)			
Dec	V	Prime and Composite numbers-The sieve of Eratosthenes-Divisors of a given number N-Euler's function $\phi(N)$ -Integral part of a real number-The highest power of a prime p contained in n!-The product of r consecutive integers is divisible by r!-Congruences- criteria of divisibility of a number by 3,9,11 form the properties of congruences -Numbers in Arithmetical Progression-Fermat's theorem.	15	Google Classroom & Google Meet	R.Rohung

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1 - B.S.C MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 17NMM1

Title of the Paper: Mathematics for Competitive Examination Paper - I

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Simple Interest	6	Google Classroom & Google Meet	K. Saranya
Sep	II	Compound Interest	6	Google Classroom & Google Meet	K. Saranya
Oct	III	Logarithms	6	Google Classroom & Google Meet	K. Saranya
Nov	IV	Time and Distance	6	Google Classroom & Google Meet	K. Saranya
Dec/Jan	V	Area, Volume and Surface Areas	6	Google Classroom & Google Meet	K. Saranya


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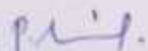
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LESSON PLAN
2021-2022

Sub. Code : 17M21

Title of the Paper: Sequence and Series

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Sets and Function- Interval in \mathbb{R} -bounded set- least upper bound and greatest lower bound-Bounded Functions- Sequences-Bounded sequences-Monotonic Sequences-Convergent, Divergent and Oscillating Sequences -The algebra of limits - Behaviour of monotonic sequences	15	Chalk & Talk	R.R. Subings
March	II	Sum theorems on limits - Subsequences - Limit Points - Cauchy sequences - The Upper and lower limits of a sequence	15	Chalk & Talk	R.R. Subings
March/April	III	Infinite series- Comparison test -Kummer's test -Root test and Condensation test- Integral test.	15	Chalk & Talk	R.R. Subings
April	IV	Alternating series - Absolute convergence -Tests for convergence of series of arbitrary terms.	15	Chalk & Talk	R.R. Subings
May	V	Fourier series - Trigonometric series - Even and odd functions - Half range Fourier Series - Extension to intervals of length 2π	15	Chalk & Talk	R.R. Subings


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Sub. Code : 21M22

Title of the Paper: Differential Equations

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Exact differential equations- Integrating factors - Differential Equations of first order and higher degree.	15	Chalk & Talk	<i>p.r.f.</i>
March	II	Linear equations with constant coefficients- Methods of finding complementary functions- Methods of finding particular integrals- Homogeneous Linear equations- Linear equations with variable coefficients (Type A only).	15	Chalk & Talk	<i>p.r.f.</i>
March/April	III	Simultaneous linear Differential Equations- Total Differential Equations.	15	Chalk & Talk	<i>p.r.f.</i>
April	IV	Laplace Transform and Inverse Laplace Transform - Solution of Differential equations using Laplace Transform.	15	Chalk & Talk	<i>p.r.f.</i>

May	V	Formation of Partial Differential Equations - First order Partial Differential Equations - Methods of solving first order Partial Differential Equations.	15	Chalk & Talk	<i>p. n. f.</i>
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LESSON PLAN
2021-2022

Sub. Code : 17NMM2

Title of the Paper: Mathematics for Competative Examinations Paper - II

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Probability	6	Chalk & Talk	
March	II	True Discount	6	Chalk & Talk	
March/April	III	Banker's Discount	6	Chalk & Talk	
April	IV	Heights & Distance	6	Chalk & Talk	
May	V	Odd Man Out and Series	6	Chalk & Talk	

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LESSON PLAN
2021-2022

Sub. Code : 17M31

Title of the Paper: Modern Algebra

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Groups - Definition and Examples - Elementary Properties - Abelian groups - Permutation groups Subgroups - Definitions and Examples - Centre - Normalizer -Intersection and Union of subgroups.	18	Google Classroom & Google Meet	
Sep	II	Cyclic groups - Definition and Examples - Theorems on Cyclic groups - Theorem on the number of generators of cyclic groups. Cosets and their properties - Lagrange's Theorem - Theorems on Co sets - Euler's theorem - Fermat's theorem	18	Google Classroom & Google Meet	

Oct	III	Normal Subgroups and Quotient group - Definition - Theorems on Normal Subgroups - Isomorphism	18	Google Classroom & Google Meet	<i>p.n.i.f.</i>
Nov	IV	Homomorphism - Types of Homomorphisms - Theorems on Homomorphisms - Kernel of a homomorphism - Isomorphism - Theorems on Isomorphism - The Fundamental theorem of homomorphism. Rings - Definitions and Examples - Elementary properties of rings.	18	Google Classroom & Google Meet	<i>p.n.i.f.</i>
Dec/Jan	V	Rings - Isomorphism - Types of Rings - characteristic of a ring - Sub rings- Ideals	18	Google Classroom & Google Meet	<i>p.n.i.f.</i>

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LESSON PLAN
2021-2022

Sub. Code : 17SEM31

Title of the Paper: Applications of Differential Equations

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Orthogonal Trajectories	6	Google Classroom & Google Meet	A. Maniyala
Sep	II	Growth and Decay	6	Google Classroom & Google Meet	A. Maniyala
Oct	III	Continuous compound interest-The Brachistochrone problem	6	Google Classroom & Google Meet	A. Maniyala
Nov	IV	Tautochronous Property of the cycloid-Simple electric circuits	6	Google Classroom & Google Meet	A. Maniyala
Dec/Jan	V	Falling bodies-Simple Harmonic Motion	6	Google Classroom & Google Meet	A. Maniyala


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LESSON PLAN
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Sub. Code : 17M41

Title of the Paper: Graph Theory

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Graphs and Subgraphs : Definitions and Examples, Degrees - Isomorphism - Independent set and Covering - Matrices - Operations in Graphs .	18	Chalk & Talk	<i>p.r.f.</i>
March	II	Connectedness: Walks , Trails and Paths - Connectedness and Components - Blocks - Connectivity. Trees : Characterization Graphs and Subgraphs : Definitions and Examples, Degrees - Isomorphism - Independent set and Covering - Matrices - Operations in Graphs .	18	Chalk & Talk	<i>p.r.f.</i>
March/April	III	Eulerian and Hamiltonian Graphs - Matchings : Matchings in Bipartite Graphs	18	Chalk & Talk	<i>p.r.f.</i>
April	IV	Planarity : Definition and Properties - Characterization of Planar Graphs Thickness , Crossing and outer Planarity.	18	Chalk & Talk	<i>p.r.f.</i>
May	V	Colourability : Chromatic Number and Chromatic Index - The Five Colour Theorem - Four Colour problem - Chromatic polynomial	18	Chalk & Talk	<i>p.r.f.</i>

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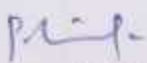
Sub. Code : 17ME4A

Title of the Paper: Statics

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Forces acting at a point – Resultant and Components- Simple cases of finding the resultant-Parallelogram of forces-Analytical expression for the resultant of two forces acting at a point- Triangle of forces –Perpendicular triangle of forces-Converse of the triangle of forces –The Polygon of forces- Lami's Theorem.	12	Chalk & Talk	<i>A. Manigala</i>
March	II	Resolution of a force – Components of a force along two given directions- Theorems on resolved parts – Resultant of any number of forces and coplanar forces acting at a point: Graphical Method & Analytical Method – Conditions of equilibrium of any number of forces acting upon a particle.	12	Chalk & Talk	<i>A. Manigala</i>

March/April	III	Parallel forces and Moments – Resultant of two like and unlike parallel forces – Resultant of a number of parallel forces acting on a rigid body-Conditions of equilibrium of three coplanar parallel forces- Centre of two parallel forces- Moment of a force – Varignon's theorem.	12	Chalk & Talk	X. Meniyah
April	IV	Couples - Equilibrium of two couples - Equivalence of two couples-Couples in parallel planes – Representation of a couple by a vector- Resultant of Coplanar couples - Resultant of a couple and a force.	12	Chalk & Talk	X. Meniyah
May	V	Friction - Definition – Experimental results – Statical, Dynamical and Limiting friction- Laws of friction- Friction a passive force- Coefficient of friction - Angle of friction- Cone of friction -Friction on inclined planes - Simple problems.	12	Chalk & Talk	X. Meniyah


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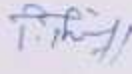
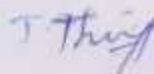
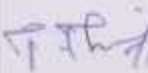
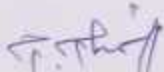
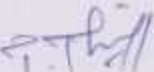



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II - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 17SEM41

Title of the Paper: Analytical Geometry 3D

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Rectangular Cartesian Coordinates-Distance between two points - direction cosines	6	Chalk & Talk	
March	II	Planes-The equation of a plane-Angle between two planes -Angle bisectors of two planes	6	Chalk & Talk	
March/April	III	Straight lines - The equation of a Straight line - A plane and line	6	Chalk & Talk	
April	IV	Equations of two skew lines in a simple form-The intersection of three planes-Volume of a Tetrahedron	6	Chalk & Talk	
May	V	The Sphere-Equation of sphere-Tangent line and Tangent plane-Section of a Sphere	6	Chalk & Talk	


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III - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 17M51

Title of the Paper: Modern Analysis

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Countable Sets - Uncountable Sets - Inequalities of Holder and Minkowski - Metric Spaces - Definitions and Examples - Bounded Sets in a Metric space - Open Ball in a Metric Space - Open Sets - Subspace - Interior of a set	15	Google Classroom & Google Meet	R. R. Arinay
Sep	II	Closed Sets - Closure - Limit Point - Dense Sets - Complete Metric Spaces - Completeness - Baire's Category Theorem.	15	Google Classroom & Google Meet	R. R. Arinay
Oct	III	Continuity - Continuity - Homeomorphism - Uniform Continuity.	15	Google Classroom & Google Meet	R. R. Arinay
Nov	IV	Connectedness - Definition and Examples - Connected Subsets of \mathbb{R} - Connectedness and Continuity	15	Google Classroom & Google Meet	R. R. Arinay
Dec/Jan	V	Compactness - Compact Metric Space- Compact Subsets of \mathbb{R} - Equivalent Characterization For Compactness - Compactness and Continuity.	15	Google Classroom & Google Meet	R. R. Arinay

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LESSON PLAN
2021-2022

Sub. Code : 17ME3A

Title of the Paper: Operations Research

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Mathematical Formulation L.P.P - Simple Problems Graphical solution - Slack and Surplus variables - The simplex method.	12	Google Classroom & Google Meet	R. R. Subramanyam
Sep	II	Method of penalties- Big -M Method - Two phase method - Degeneracy and Cycling.	12	Google Classroom & Google Meet	R. R. Subramanyam
Oct	III	General primal - Dual pair - Formulating a Dual problem - Primal- Dual pair in Matrix form - Duality and Simplex Method - Dual Simplex Method	12	Google Classroom & Google Meet	R. R. Subramanyam
Nov	IV	Transportation Problem - Northwest corner rule - Matrix Minima Method - Vogel's Approximation Method - The Modified Distribution Method - Assignment Problem	12	Google Classroom & Google Meet	R. R. Subramanyam
Dec/Jan	V	Game theory - Two- person zero-sum game - Some basic terms - The Maximin - Minimax Principle - Games without saddle points- Mixed Strategies - Graphic Solution of $2 \times n$ and $m \times 2$ games - Dominance Property.	12	Google Classroom & Google Meet	R. R. Subramanyam


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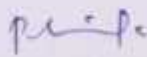
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LESSON PLAN
2021-2022


Sub. Code : 17M52

Title of the Paper: Statistics - I

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Moments, Skewness and Kurtosis. Moments-Skewness-Kurtosis-Curve fitting a straight line-Fitting a second Degree Parabola.	15	Google Classroom & Google Meet	A. Maniyal
Sep	II	Correlation and Regression: Correlation-Rank Correlation-Regression-Correlation Coefficient for a Bivariate frequency Distribution.	15	Google Classroom & Google Meet	A. Maniyal
Oct	III	Theory of Attribute: Theory of attributes-Attributes consistency of Data-Independence and Association of data.	15	Google Classroom & Google Meet	A. Maniyal
Nov	IV	Index number: Index numbers-Aggregate Method-Average of Price relatives Method-Weighted aggregative Method-Weighted Average of Price Relative Method-Consumer Price Index number (cost of living index number)	15	Google Classroom & Google Meet	A. Maniyal
Dec/Jan	V	Probability: Probability-conditional Probability	15	Google Classroom & Google Meet	A. Maniyal


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III - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 17M53

Title of the Paper: Dynamics

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Projectiles - Definitions - Two fundamental principles - Path of a Projectile is a parabola - Characteristics of the motion of a projectile - To determine when the horizontal range of a projectile is maximum, given the magnitude u of the velocity of projection - To show that, for a given initial velocity of projection there are, in general to possible directions of projections so as to obtain a given horizontal range.	12	Google Classroom & Google Meet	
Sep	II	Projectiles -To find the velocity of the projectile in magnitude and direction at the end of time t - To show that, The velocity at any point p of a projectile is equal in magnitude to the velocity acquire in falling freely from the directrix to the point - Given the magnitude of the velocity of projection, to show that there are two direction of projection for the particle so as to reach a given point - Range on an inclined plane - To find, The greatest distance of the projectile from the inclined plane and show that is attained in the half the total time of flight - To determine when the range on the inclined plane is maximum, given the magnitude u of the velocity of projection - To show that, For a given initial velocity of	12	Google Classroom & Google Meet	

		projection, there are, in general, two possible directions of projection so as to obtain a given range on an inclined plane – Motion on the surface of a smooth inclined plane.			
Oct	III	Collision of Elastic Bodies – Definitions – Fundamental laws of impact – Impact on the smooth sphere on a fixed smooth plane – Direct impact of two smooth spheres – Laws of kinetic energy due to direct impact of two smooth spheres – Oblique impact of two smooth spheres – Laws of kinetic energy due to oblique impact of two smooth sphere.	12	Google Classroom & Google Meet	P. P. ...
Nov	IV	Simple Harmonic Motions – Simple Harmonic Motion in a Straight line – General solution of S.H.M Equation – Geometrical Representation of a Simple Harmonic Motion – Change of origin – Composition of two Simple Harmonic Motion of the same period and in same straight line – Composition of two Simple Harmonic Motion of the same period in two perpendicular directions.	12	Google Classroom & Google Meet	P. P. ...
Dec/Jan	V	Motion Under The Action Of Central Forces – Velocity and Acceleration in Polar Coordinates – Equation of Motion in Polar Coordinates – Note on the equiangular spiral – Differential Equation of central orbits – Perpendicular from the pole on the tangent formulae in polar coordinates – Pedal equation of the central orbit.	12	Google Classroom & Google Meet	P. P. ...

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III - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 17AA51

Title of the Paper: Programming in C

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Overview of C- Constant, Variable and Data Types.	12	Google Classroom & Google Meet	<i>P. R. S.</i>
Sep	II	Operators and Expressions-Decision Making and Branching	12	Google Classroom & Google Meet	<i>P. R. S.</i>
Oct	III	Arrays-Character Arrays and Strings	12	Google Classroom & Google Meet	<i>P. R. S.</i>
Nov	IV	User-defined Functions	12	Google Classroom & Google Meet	<i>P. R. S.</i>
Dec/Jan	V	Structures and Unions - Pointers	12	Google Classroom & Google Meet	<i>P. R. S.</i>

P. R. S.
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III - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 17AA5P

Title of the Paper: C - Practical

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Simple interest Compound interest and find the n_{cr} values using functions	6	PPT	<i>P. N. J.</i>
Sep	II	Greatest number among 3 numbers. to sort the numbers in Ascending order to add the given two matrices	6	PPT	<i>P. N. J.</i>
Oct	III	Salesman commission & to maintain the employee details using structure using pointers	6	PPT	<i>P. N. J.</i>
Nov	IV	Check a given number is Armstrong.	6	PPT	<i>P. N. J.</i>
Dec/Jan	V	Reverse a given digit the given string-checking Palindrome Find the sum of the digits.	6	PPT	<i>P. N. J.</i>

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LESSON PLAN
2021-2022

Sub. Code : 17SEM51

Title of the Paper: Vector Calculus

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Structures and Unions -Pointers	6	Google Classroom & Google Meet	S. Sriprya
Sep	II	Divergence and Curl - Solved problems.	6	Google Classroom & Google Meet	S. Sriprya
Oct	III	Directional derivative - Solenoidal - Irrotational vectors.	6	Google Classroom & Google Meet	S. Sriprya
Nov	IV	Line integral - Surface integral (without problems)	6	Google Classroom & Google Meet	S. Sriprya
Dec/Jan	V	Theorems of Green, Gauss and Stoke's theorem (without proof) Simple applications.	6	Google Classroom & Google Meet	S. Sriprya


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LESSON PLAN
2021-2022

Sub. Code : 17SEM52

Title of the Paper: Quantitative Aptitude

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Problems on Numbers & Problems on Ages	6	Google Classroom & Google Meet	R.R. Arinje
Sep	II	Profit and Loss - Ratio and Proportion	6	Google Classroom & Google Meet	R.R. Arinje
Oct	III	Time and Work - Time and Distance	6	Google Classroom & Google Meet	R.R. Arinje
Nov	IV	Averages - Probability	6	Google Classroom & Google Meet	R.R. Arinje
Dec/Jan	V	Permutations and Combinations - Heights & Distance	6	Google Classroom & Google Meet	R.R. Arinje


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LESSON PLAN
2021-2022

Sub. Code : 174EV5

Title of the Paper: Environmental Studies

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Introduction - Environmental Studies - Nautre, scope, importance - Natural resources - Forest resources Deforestation - Aforestration - Water Resources	6	Google Classroom & Google Meet	P. Pannulakshmi
Oct	II	Eco system - concept of structure of functions - energy flow - food chain - food web - Ecological pyramid types of ecosystem - aquation and terrestrial	6	Google Classroom & Google Meet	P. Pannulakshmi
Oct	III	Bio diversity - definition value of bio diversity - India - Omega diversity zone - hotspots - endangered and endemic spices of India - threat to bio-diversity conservation of Bio-diversity	6	Google Classroom & Google Meet	P. Pannulakshmi
Nov	IV	Environmental pollution - Air, water, soil and noise, solid waste types of materials, - solid waste management (composting)	6	Google Classroom & Google Meet	P. Pannulakshmi

Dec	V	Social issues - Unsustainable to sustainable development - Climate change - Green house effect - Global warming - Population - Explosion Women and child welfare relating to environment	6	Google Classroom & Google Meet	
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LESSON PLAN
2021-2022

Sub. Code : 17ME5A

Title of the Paper: Linear Algebra

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Vector Spaces: Definition and Examples-Subspaces-Linear Transformations.	12	Google Classroom & Google Meet	A. Maniyala
Sep	II	Vector Space: Span of a set -Linear Independence-Basis and Dimensions-Rank and Nullity-Matrix of Linear Transformation.	12	Google Classroom & Google Meet	A. Maniyala
Oct	III	Inner Product space-Definition of Examples-Orthogonality-Orthogonal Complement.	12	Google Classroom & Google Meet	A. Maniyala
Nov	IV	Theory of Matrices: Algebra of Matrices-Types of Matrices-Inverse of Matrix.	12	Google Classroom & Google Meet	A. Maniyala
Dec/Jan	V	Theory of Matrices: Elementary Transformations-Rank of a Matrix-Simultaneous Linear Equations-Characteristic Equation and Cayley Hamilton Theorem-Eigen values and Eigen vectors.	12	Google Classroom & Google Meet	A. Maniyala


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LESSON PLAN
2021-2022

Sub. Code : 17M61

Title of the Paper: Complex Analysis

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Complex Numbers - Conjugation and Modulus- Inequalities - Square Root -Geometrical Representation of Complex Numbers - n^{th} Roots of Complex Numbers - Circles and Straight Lines - Regions in the Complex Plane	18	Chalk & Talk	R.R. Arumugam
March	II	Functions of a Complex Variable- Limits - Theorems on Limit - Continuous Functions - Differentiability - The Cauchy - Riemann Equations - Analytic Functions - Harmonic Functions.	18	Chalk & Talk	R.R. Arumugam
March/April	III	Bilinear Transformations -Invariant Points - Cross Ratio - Special Bilinear Transformation (i) which map real axis to real axis - (ii) Unit circle to unit circle -(iii) Real axis to unit circle.	18	Chalk & Talk	R.R. Arumugam
April	IV	Complex Integration - Cauchy's Integral Theorem - Extensions of Cauchy's integral Theorem- Cauchy's integral formula -	18	Chalk & Talk	R.R. Arumugam

		Derivatives of analytic functions - Morera's Theorem - Cauchy's inequality for $f'(z_0)$ - Liouville's Theorem - Fundamental Theorem of Algebra-Maximum modulus theorem - Taylor's theorem - Laurent's theorem.			
May	V	Singular points - Essential Singularity - Meromorphic function - Principle of the Argument - Rouché's theorem - Fundamental Theorem of Algebra - Evaluation of Residue at a pole - Residue Theorem - Evaluation of Definite Integrals.	18	Chalk & Talk	R. R. R.

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LESSON PLAN
2021-2022

Sub. Code : 17M62

Title of the Paper: Statistics - II

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	I Random Variables: Discrete Random Variables – Continuous Random Variables - Mathematical Expectations – Moment Generating Functions- Characteristic Function.	18	Chalk & Talk	<i>A. Maniyal</i>
March	II	Some special distributions: Binomial Distributions – Poisson Distributions-Normal Distributions -Some More Continuous Distributions (Gamma distribution ,Chi Square distribution , Student's -t distribution, Snedecor's-F distribution and Fischer's, Z-distributions).	18	Chalk & Talk	<i>A. Maniyal</i>
March/April	III	Test of significance (Large samples): Sampling – Sampling Distribution – Testing of Hypothesis – Procedure for Testing of Hypothesis for Large Sample.	18	Chalk & Talk	<i>A. Maniyal</i>



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LESSON PLAN
2021-2022

Sub. Code : 17M63

Title of the Paper: Numerical Methods

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Algebraic and Transcendental Equations - Introduction - Iteration Method - Bisection Method - Regula Falsi method - Newton-Raphson Method Simultaneous Equations - Back substitution - Gauss Elimination Method - Gauss Jordan Elimination Method - Iterative methods- Gauss Jacobi Iteration Method - Gauss-Seidal Iteration Method.	18	Chalk & Talk	R.R. Arinje
March	II	Finite Differences - Difference operators- Forward Differences - Backward Differences - Central difference operators - Other Difference operators.	18	Chalk & Talk	R.R. Arinje.
March/April	III	Interpolation - Newton's Interpolation Formula - Lagrange's Interpolation formula - Divided Differences - Newton's Divided	18	Chalk & Talk	R.R. Arinje

April	IV	Test of Significance (Small samples): Test of significance based on t-distribution(t-test) - Test for significance based on F-test - Test for significance of an observed sample Correlation.	18	Chalk & Talk	R.R. Arinje
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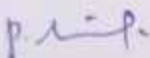
LESSON PLAN
2021-2022

Sub. Code : 17AA61

Title of the Paper: Object Oriented Programming with C++

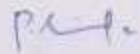
Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Beginning with C++ - Tokens - Expressions and Control structures.	12	Chalk & Talk	A. Maniyala
March	II	Functions in C++ - Classes and Objects.	12	Chalk & Talk	A. Maniyala
March/April	III	Constructors and Destructors - Operator overloading and data type conversions.	12	Chalk & Talk	A. Maniyala
April	IV	Inheritance - Extending classes - Pointers	12	Chalk & Talk	A. Maniyala
May	V	Virtual functions and Polymorphism - Managing console I/O operations - working with files.	12	Chalk & Talk	A. Maniyala


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		differences formula – Inverse Interpolation.			
April	IV	Numerical Differentiation and Integration – Derivatives using Newton's forward difference formula – Derivatives using Newton's backward difference formula – Derivatives using central difference formula – Maxima and minima of the interpolating polynomial – Numerical integration – Newton-Cote's quadrature formula - Trapezoidal rule - Simpson's one third rule - Simpson's three eight rule.	18	Chalk & Talk	R. R. Subhaya
May	V	Numerical Solutions of Ordinary Differential Equations – Taylor's Series Method – Picard's Method - Euler's Method – Runge-Kutta Methods .	18	Chalk & Talk	R. R. Subhaya


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LESSON PLAN
2021-2022

Sub. Code : 17AA6P

Title of the Paper: C++ practicals

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb	I	Program to convert the value of Fahrenheit into Celcius - program to calculate the Standard Deviation - program to display the numbers using for loop	6	Chalk & Talk	<i>A. Maniyala</i>
Mar	II	Program to check whether the given number is a palindrome - program to calculate the factorial of a given number using recursion function - program to find the largest value using nesting function	6	Chalk & Talk	<i>A. Maniyala</i>
Apr	III	Program to find the sum and difference of two numbers using member function - program to display the number using constructor and destructor.	6	Chalk & Talk	<i>A. Maniyala</i>
May	IV	Program to display the employee details - program using object as pointer for displaying students results.	6	Chalk & Talk	<i>A. Maniyala</i>
June	V	Program to add the two complex numbers - program to find student mark details using array within a class.	6	Chalk & Talk	<i>A. Maniyala</i>

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A. Maniyala
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LESSON PLAN
2021-2022

Sub. Code : 17SEM61

Title of the Paper: Discrete Mathematics

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Introduction- ^{TF} statements - Connectives	6	Chalk & Talk	P. Ponnulakshmi
March	II	Atomic and compound statements- Well formed (statement) formulae - Truth table of a formula - Tautology- Tautological Implication and equivalence of formulae	6	Chalk & Talk	P. Ponnulakshmi
March/April	III	Lattices-Some Properties of Lattices-New Lattices	6	Chalk & Talk	P. Ponnulakshmi
April	IV	Modular and Distributive Lattices - Boolean Algebra	6	Chalk & Talk	P. Ponnulakshmi
May	V	Recurrence -an introduction -Recurrence Relation - Worked Examples.	6	Chalk & Talk	P. Ponnulakshmi


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LESSON PLAN
2021-2022

Sub. Code : 17SEM62

Title of the Paper: Combinatorics

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	The Rules of Sum and Product	6	Chalk & Talk	
March	II	Permutations - Combinations - Permutations and Combinations with Repetitions	6	Chalk & Talk	
March/April	III	The Binomial Theorem - Pascal's Identity - Vander Monde's Identity	6	Chalk & Talk	
April	IV	The Multinomial Theorem - Ramsey Number	6	Chalk & Talk	
May	V	The Catalan Numbers - Stirling Numbers and Bell Numbers.	6	Chalk & Talk	

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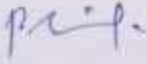
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III - B.SC MATHEMATICS (REGULAR)
LESSON PLAN
2021-2022

Sub. Code : 174VE6

Title of the Paper: Value Education

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb	I	Value education -need and important -objectives types of values-Nature and concept of moral education - value education as moral education	6	Chalk & Talk	P. K. H.
Mar	II	Values of home-Role of women in decision making-Parental care-care for the aged family conflicts and resolution.	6	Chalk & Talk	P. K. H.
Apr	III	Character formation towards positive personality- Truthless, Sacrifice, sincerity, self confident-altruism, tolerance-confident honesty and courage	6	Chalk & Talk	P. K. H.
May	IV	Indian Religions- values in hindusim, Christianity, Buddhisim, secularism and commutac, Harmony	6	Chalk & Talk	P. K. H.
June	V	Human Rights-Fundamental Rights, Human Rights act 1993 (amended 2006)Consumer Production act 1986, Right to information act 2005 productive laws for women - dowry prohibition act 1961.Domestic violence act2005	6	Chalk & Talk	P. K. H.


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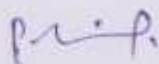
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LESSON PLAN
2021-2022

Sub. Code : 21M11

Title of the Paper: Calculus

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Envelopes-Curvature-Circle, Radius and Centre of Curvature-The coordinate of the centre of Curvature-Evolutes and involutes	15	Google Classroom & Google Meet	A. Maniyala
Sep	II	Radius of Curvature in Polar Co-ordinates p-r equations-Pedal Equations of curves-Maxima & Minima of function of two variables.	15	Google Classroom & Google Meet	A. Maniyala
Oct	III	Evaluation of definite Integrals, Reduction formulae	15	Google Classroom & Google Meet	A. Maniyala
Nov	IV	Beta and Gamma functions	15	Google Classroom & Google Meet	A. Maniyala
Dec/Jan	V	Double integrals-Evaluation of Double-Triple integrals-change of variables in double and Triple integrals.	15	Google Classroom & Google Meet	A. Maniyala


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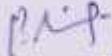
Sub. Code : 21M12

Title of the Paper: Theory of Equation and Number system

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	An equation with real coefficients, rational coefficients - Relation between the roots and coefficients of equations.	15	Google Classroom & Google Meet	R.R. Subhanya
Sep	II	Symmetric function of the roots-Sum of the power of the roots of an Equation-Newton's Theorem on the sum of the power of the roots - Transformations of Equations - Reciprocal Equations.	15	Google Classroom & Google Meet	R.R. Subhanya
Oct	III	To increase or decrease the roots of a given equation by a given quantity-Removal of terms - Transformation in general.	15	Google Classroom & Google Meet	R.R. Subhanya
Nov	IV	Descarte's rule of signs - Rolle's Theorem - Multiple roots - General	15	Google Classroom & Google Meet	R.R. Subhanya

		solution of the cubic equation: Cardon's method. (Only)			
Dec	V	Prime and Composite numbers-The sieve of Eratosthenes-Divisors of a given number N -Euler's function $\phi(N)$ -Integral part of a real number-The highest power of a prime p contained in $n!$ -The product of r consecutive integers is divisible by $r!$ -Congruences- criteria of divisibility of a number by 3,9,11 form the properties of congruences -Numbers in Arithmetical Progression-Fermat's theorem.	15	Google Classroom & Google Meet	R.P. Subhaya


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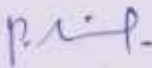
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LESSON PLAN
2021-2022

Sub. Code : 17NMM1

Title of the Paper: Mathematics for Competitive Examination Paper - I

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Simple Interest	6	Google Classroom & Google Meet	K. Saranya
Sep	II	Compound Interest	6	Google Classroom & Google Meet	K. Saranya
Oct	III	Logarithms	6	Google Classroom & Google Meet	K. Saranya
Nov	IV	Time and Distance	6	Google Classroom & Google Meet	K. Saranya
Dec/Jan	V	Area, Volume and Surface Areas	6	Google Classroom & Google Meet	K. Saranya


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LESSON PLAN
2021-2022

Sub. Code : 17M21

Title of the Paper: Sequence and Series

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Sets and Function- Interval in \mathbb{R} -bounded set- least upper bound and greatest lower bound-Bounded Functions- Sequences-Monotonic Sequences-Convergent, Divergent and Oscillating Sequences -The algebra of limits - Behaviour of monotonic sequences	15	Chalk & Talk	<i>selvi</i>
March	II	Sum theorems on limits - Subsequences - Limit Points - Cauchy sequences - The Upper and lower limits of a sequence	15	Chalk & Talk	<i>selvi</i>
March/April	III	Infinite series- Comparison test -Kummer's test -Root test and Condensation test- Integral test.	15	Chalk & Talk	<i>selvi</i>
April	IV	Alternating series - Absolute convergence -Tests for convergence of series of arbitrary terms.	15	Chalk & Talk	<i>selvi</i>
May	V	Fourier series - Trigonometric series - Even and odd functions - Half range Fourier Series - Extension to intervals of length 2π	15	Chalk & Talk	<i>selvi</i>

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LESSON PLAN
2021-2022

Sub. Code : 21M22


Title of the Paper: Differential Equations

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Exact differential equations- Integrating factors - Differential Equations of first order and higher degree.	15	Chalk & Talk	K. Saranya
March	II	Linear equations with constant coefficients- Methods of finding complementary functions- Methods of finding particular integrals- Homogeneous Linear equations- Linear equations with variable coefficients (Type A only).	15	Chalk & Talk	K. Saranya
March/April	III	Simultaneous linear Differential Equations- Total Differential Equations.	15	Chalk & Talk	K. Saranya
April	IV	Laplace Transform and Inverse Laplace Transform - Solution of Differential equations using Laplace Transform.	15	Chalk & Talk	K. Saranya
May	V	Formation of Partial Differential Equations -First order Partial Differential Equations -Methods of solving first order Partial Differential Equations.	15	Chalk & Talk	K. Saranya

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LESSON PLAN
2021-2022

Sub. Code : 17NMM2

Title of the Paper: Mathematics for Competitive Examinations Paper - II

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Probability	6	Chalk & Talk	<i>[Signature]</i>
March	II	True Discount	6	Chalk & Talk	<i>[Signature]</i>
March/April	III	Banker's Discount	6	Chalk & Talk	<i>[Signature]</i>
April	IV	Heights & Distance	6	Chalk & Talk	<i>[Signature]</i>
May	V	Odd Man Out and Series	6	Chalk & Talk	<i>[Signature]</i>

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2021-2022

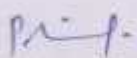
Sub. Code : 17M31

Title of the Paper: Modern Algebra

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Groups - Definition and Examples - Elementary Properties - Abelian groups - Permutation groups Subgroups - Definitions and Examples - Centre - Normalizer -Intersection and Union of subgroups.	18	Google Classroom & Google Meet	
Sep	II	Cyclic groups - Definition and Examples - Theorems on Cyclic groups - Theorem on the number of generators of cyclic groups. Cosets and their properties - Lagrange's Theorem - Theorems on Co sets - Euler's theorem - Fermat's theorem	18	Google Classroom & Google Meet	

Oct	III	Normal Subgroups and Quotient group - Definition - Theorems on Normal Subgroups - Isomorphism	18	Google Classroom & Google Meet	R.Mh
Nov	IV	Homomorphism - Types of Homomorphisms - Theorems on Homomorphisms - Kernel of a homomorphism - Isomorphism - Theorems on Isomorphism - The Fundamental theorem of homomorphism. Rings - Definitions and Examples - Elementary properties of rings.	18	Google Classroom & Google Meet	R.Mh
Dec/Jan	V	Rings - Isomorphism - Types of Rings - characteristic of a ring - Sub rings- Ideals	18	Google Classroom & Google Meet	R.Mh


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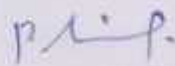
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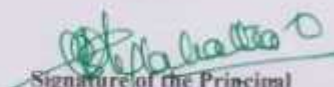
Sub. Code : 17SEM31

Title of the Paper: Applications of Differential Equations

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Orthogonal Trajectories	6	Google Classroom & Google Meet	R.Mh
Sep	II	Growth and Decay	6	Google Classroom & Google Meet	R.Mh
Oct	III	Continuous compound interest-The Brachistochrome problem	6	Google Classroom & Google Meet	R.Mh
Nov	IV	Tautochronous Property of the cycloid-Simple electric circuits	6	Google Classroom & Google Meet	R.Mh
Dec/Jan	V	Falling bodies-Simple Harmonic Motion	6	Google Classroom & Google Meet	R.Mh


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LESSON PLAN
2021-2022

Sub. Code : 17M41

Title of the Paper: Graph Theory

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Graphs and Subgraphs : Definitions and Examples, Degrees - Isomorphism - Independent set and Covering - Matrices - Operations in Graphs .	18	Chalk & Talk	
March	II	Connectedness: Walks , Trails and Paths - Connectedness and Components - Blocks - Connectivity. Trees : Characterization Graphs and Subgraphs : Definitions and Examples, Degrees - Isomorphism - Independent set and Covering - Matrices - Operations in Graphs .	18	Chalk & Talk	
March/April	III	Eulerian and Hamiltonian Graphs - Matchings : Matchings in Bipartite Graphs	18	Chalk & Talk	
April	IV	Planarity : Definition and Properties - Characterization of Planar Graphs Thickness , Crossing and outer Planarity.	18	Chalk & Talk	
May	V	Colourability : Chromatic Number and Chromatic Index - The Five Colour Theorem - Four Colour problem - Chromatic polynomial	18	Chalk & Talk	

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LESSON PLAN

2021-2022

Sub. Code : 17ME4A

Title of the Paper: Statics

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Forces acting at a point - Resultant and Components- Simple cases of finding the resultant- Parallelogram of forces- Analytical expression for the resultant of two forces acting at a point- Triangle of forces -Perpendicular triangle of forces- Converse of the triangle of forces -The Polygon of forces- Lami's Theorem.	12	Chalk & Talk	<i>P. K. Thi</i>
March	II	Resolution of a force - Components of a force along two given directions- Theorems on resolved parts - Resultant of any number of forces and coplanar forces- acting at a point: Graphical Method & Analytical Method - Conditions of equilibrium of any number of forces acting upon a particle.	12	Chalk & Talk	<i>P. K. Thi</i>

March/April	III	Parallel forces and Moments - Resultant of two like and unlike parallel forces - Resultant of a number of parallel forces acting on a rigid body-Conditions of equilibrium of three coplanar parallel forces- Centre of two parallel forces- Moment of a force - Varignon's theorem.	12	Chalk & Talk	P. K. P.
April	IV	Couples - Equilibrium of two couples - Equivalence of two couples-Couples in parallel planes - Representation of a couple by a vector- Resultant of Coplanar couples - Resultant of a couple and a force.	12	Chalk & Talk	P. K. P.
May	V	Friction - Definition - Experimental results - Statical, Dynamical and Limiting friction- Laws of friction- Friction a passive force- Coefficient of friction - Angle of friction- Cone of friction -Friction on inclined planes - Simple problems.	12	Chalk & Talk	P. K. P.

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LESSON PLAN
2021-2022

Sub. Code : 17SEM41

Title of the Paper: Analytical Geometry 3D

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Rectangular Cartesian Coordinates-Distance between two points - direction cosines	6	Chalk & Talk	R.Mh
March	II	Planes-The equation of a plane-Angle between two planes -Angle bisectors of two planes	6	Chalk & Talk	R.Mh
March/April	III	Straight lines - The equation of a Straight line - A plane and line	6	Chalk & Talk	R.Mh
April	IV	Equations of two skew lines in a simple form-The intersection of three planes-Volume of a Tetrahedron	6	Chalk & Talk	R.Mh
May	V	The Sphere-Equation of sphere-Tangent line and Tangent plane-Section of a Sphere	6	Chalk & Talk	R.Mh

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LESSON PLAN
2021-2022

Sub. Code : 17ME3A

Title of the Paper: Operations Research

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Mathematical Formulation L.P.P - Simple Problems Graphical solution - Slack and Surplus variables - The simplex method.	12	Google Classroom & Google Meet	
Sep	II	Method of penalties- Big -M Method - Two phase method - Degeneracy and Cycling.	12	Google Classroom & Google Meet	
Oct	III	General primal - Dual pair - Formulating a Dual problem - Primal- Dual pair in Matrix form - Duality and Simplex Method - Dual Simplex Method	12	Google Classroom & Google Meet	
Nov	IV	Transportation Problem - Northwest corner rule - Matrix Minima Method - Vogel's Approximation Method - The Modified Distribution Method - Assignment Problem	12	Google Classroom & Google Meet	
Dec/Jan	V	Game theory - Two- person zero-sum game - Some basic terms - The Maximin - Minimax Principle - Games without saddle points- Mixed Strategies - Graphic Solution of $2 \times n$ and $m \times 2$ games - Dominance Property.	12	Google Classroom & Google Meet	

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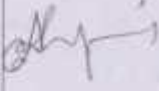
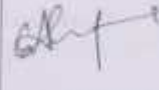
LESSON PLAN
2021-2022

Sub. Code : 17M51

Title of the Paper: Modern Analysis

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Countable Sets - Uncountable Sets - Inequalities of Holder and Minkowski - Metric Spaces -Definitions and Examples - Bounded Sets in a Metric space - Open Ball in a Metric Space - Open Sets - Subspace - Interior of a set .	15	Google Classroom & Google Meet	
Sep	II	Closed Sets - Closure - Limit Point - Dense Sets - Complete Metric Spaces - Completeness - Baire's Category Theorem.	15	Google Classroom & Google Meet	
Oct	III	Continuity - Continuity - Homeomorphism - Uniform Continuity.	15	Google Classroom & Google Meet	

Nov	IV	Connectedness - Definition and Examples - Connected Subsets of \mathbf{R} - Connectedness and Continuity	15	Google Classroom & Google Meet	
Dec/Jan	V	Compactness - Compact Metric Space- Compact Subsets of \mathbf{R} - Equivalent Characterization For Compactness - Compactness and Continuity.	15	Google Classroom & Google Meet	



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LESSON PLAN
2021-2022

Sub. Code : 17M52

Title of the Paper: Statistics - I

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Moments, Skewness and Kurtosis: Moments- Skewness-Kurtosis-Curve fitting a straight line-Fitting a second Degree Parabola.	15	Google Classroom & Google Meet	<i>[Signature]</i>
Sep	II	Correlation and Regression: Correlation-Rank Correlation-Regression- Correlation Coefficient for a Bivariate frequency Distribution.	15	Google Classroom & Google Meet	<i>[Signature]</i>
Oct	III	Theory of Attribute: Theory of attributes-Attributes consistency of Data-Independence and Association of data	15	Google Classroom & Google Meet	<i>[Signature]</i>
Nov	IV	Index number: Index numbers-Aggregate Method-Average of Price relatives Method-Weighted aggregative Method-Weighted Average of Price Relative Method-Consumer Price Index number (cost of living index number)	15	Google Classroom & Google Meet	<i>[Signature]</i>
Dec/Jan	V	Probability: Probability-conditional Probability	15	Google Classroom & Google Meet	<i>[Signature]</i>

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LESSON PLAN
2021-2022

Sub. Code : 17M53

Title of the Paper: Dynamics

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Projectiles - Definitions - Two fundamental principles - Path of a Projectile is a parabola - Characteristics of the motion of a projectile - To determine when the horizontal range of a projectile is velocity of projection - To show that, for a given initial velocity of projection there are, in general to possible directions of projections so as to obtain a given horizontal range.	12	Google Classroom & Google Meet	
Sep	II	Projectiles -To find the velocity of the projectile in magnitude and direction at the end of time t - To show that, The velocity at any point p of a projectile is equal in magnitude to the velocity acquire in falling freely from the directrix to the point -projection for the particle so as to reach a given point -plane and show that is attained in the half the total time of flight -is maximum, given the magnitude u of the velocity	12	Google Classroom & Google Meet	

		of projection - To show that, For a given initial velocity of projection, there are, in general, two possible directions of projection so as to obtain a given range on an inclined plane			
Oct	III	Collision of Elastic Bodies - Definitions - Fundamental laws of impact - Impact on the smooth sphere on a fixed smooth plane - Direct impact of two smooth spheres - Oblique impact of two smooth spheres - Laws of kinetic energy due to oblique impact of two smooth sphere.	12	Google Classroom & Google Meet	P. P. ...
Nov	IV	Simple Harmonic Motions - Simple Harmonic Motion in a Straight line - General solution of S.H.M. Equation - Geometrical - Composition of two Simple Harmonic Motion of the same period in two perpendicular directions.	12	Google Classroom & Google Meet	P. P. ...
Dec/Jan	V	Motion Under The Action Of Central Forces - Velocity and Acceleration in Polar Coordinates - Note on the equiangular spiral - Differential Equation of central orbits - Perpendicular from the pole on the tangent formulae in polar coordinates	12	Google Classroom & Google Meet	P. P. ...

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LESSON PLAN
2021-2022

Sub. Code : 17AA51

Title of the Paper: Programming in C

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Overview of C- Constant, Variable and Data Types.	12	Google Classroom & Google Meet	
Sep	II	Operators and Expressions- Decision Making and Branching	12	Google Classroom & Google Meet	
Oct	III	Arrays-Character Arrays and Strings	12	Google Classroom & Google Meet	
Nov	IV	User-defined Functions	12	Google Classroom & Google Meet	
Dec/Jan	V	Structures and Unions - Pointers	12	Google Classroom & Google Meet	

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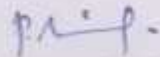
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LESSON PLAN
2021-2022

Sub. Code : 17AA5P

Title of the Paper: C - Practical

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Simple interest Compound interest and find the n , r values using functions	6	PPT	S Sri Priya
Sep	II	Greatest number among 3 numbers. to sort the numbers in Ascending order to add the given two matrices	6	PPT	S Sri Priya
Oct	III	Salesman commission & to maintain the employee details using structure. using pointers	6	PPT	S Sri Priya
Nov	IV	Check a given number is Armstrong	6	PPT	S Sri Priya
Dec/Jan	V	Reverse a given digit the given string-checking Palindrome Find the sum of the digits.	6	PPT	S Sri Priya


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LESSON PLAN
2021-2022

Sub. Code : 17ME5A

Title of the Paper: Linear Algebra

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Vector Spaces:Definition and Examples-Subspaces-Linear Transformations.	12	Google Classroom & Google Meet	
Sep	II	Vector Space: Span of a set -Linear Independence-Basis and Dimensions-Rank and Nullity-Matrix of Linear Transformation.	12	Google Classroom & Google Meet	
Oct	III	Inner Product space-Definition of Examples-Orthogonality-Orthogonal Complement.	12	Google Classroom & Google Meet	
Nov	IV	Theory of Matrices: Algebra of Matrices-Types of Matrices-Inverse of Matrix.	12	Google Classroom & Google Meet	
Dec/Jan	V	Theory of Matrices: Elementary Transformations-Rank of a Matrix-Simultaneous Linear Equations-Characteristic Equation and Cayley Hamilton Theorem-Eigen values and Eigen vectors.	12	Google Classroom & Google Meet	

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LESSON PLAN
2021-2022

Sub. Code : 17SEM51

Title of the Paper: Vector Calculus

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Structures and Unions - Pointers	6	Google Classroom & Google Meet	
Sep	II	Divergence and Curl - Solved problems.	6	Google Classroom & Google Meet	
Oct	III	Directional derivative - Solenoidal - Irrotational vectors.	6	Google Classroom & Google Meet	
Nov	IV	Line integral - Surface integral (without problems)	6	Google Classroom & Google Meet	
Dec/Jan	V	Theorems of Green, Gauss and Stoke's theorem (without proof) Simple applications.	6	Google Classroom & Google Meet	

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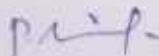
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LESSON PLAN
2021-2022

Sub. Code : 17SEM52

Title of the Paper: Quantitative Aptitude

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Problems on Numbers & Problems on Ages	6	Google Classroom & Google Meet	R.R. Arun
Sep	II	Profit and Loss- Ratio and Proportion	6	Google Classroom & Google Meet	R.R. Arun
Oct	III	Time and Work- Time and Distance	6	Google Classroom & Google Meet	R.R. Arun
Nov	IV	Averages - Probability	6	Google Classroom & Google Meet	R.R. Arun
Dec/Jan	V	Permutations and Combinations - Heights & Distance	6	Google Classroom & Google Meet	R.R. Arun


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LESSON PLAN
2021-2022

Sub. Code : 174EV5

Title of the Paper: Environmental Studies

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Introduction - Environmental Studies - Nature, scope, importance - Natural resources - Forest resources - Deforestation - Afforestation - Water Resources	6	Google Classroom & Google Meet	P. Ponnababai
Oct	II	Eco system - concept of structure of functions - energy flow - food chain - food web - Ecological pyramid types of ecosystem - aquatic and terrestrial	6	Google Classroom & Google Meet	P. Ponnababai
Oct	III	Bio diversity - definition value of bio diversity - India - Omega diversity zone - hotspots - endangered and endemic species of India - threat to bio-diversity conservation of Bio-diversity	6	Google Classroom & Google Meet	P. Ponnababai
Nov	IV	Environmental pollution - Air, water, soil and noise, solid waste types of materials, - solid waste management (composting)	6	Google Classroom & Google Meet	P. Ponnababai

Dec	V	Social issues - Unsustainable to sustainable development - Climate change - Green house effect - Global warming - Population - Explosion Women and child welfare relating to environment	6	Google Classroom & Google Meet	P. Praveen
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P. Praveen
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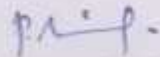
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LESSON PLAN
2021-2022

Sub. Code : 17AA5P

Title of the Paper: C - Practical

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Simple interest Compound interest and find the n , r values using functions	6	PPT	S Sri Priya
Sep	II	Greatest number among 3 numbers. to sort the numbers in Ascending order to add the given two matrices	6	PPT	S Sri Priya
Oct	III	Salesman commission & to maintain the employee details using structure. using pointers	6	PPT	S Sri Priya
Nov	IV	Check a given number is Armstrong	6	PPT	S Sri Priya
Dec/Jan	V	Reverse a given digit the given string-checking Palindrome Find the sum of the digits.	6	PPT	S Sri Priya


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III - B.SC MATHEMATICS (SF)
LESSON PLAN
2021-2022

Sub. Code : 17ME5A

Title of the Paper: Linear Algebra

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Vector Spaces:Definition and Examples-Subspaces-Linear Transformations.	12	Google Classroom & Google Meet	
Sep	II	Vector Space: Span of a set -Linear Independence-Basis and Dimensions-Rank and Nullity-Matrix of Linear Transformation.	12	Google Classroom & Google Meet	
Oct	III	Inner Product space-Definition of Examples-Orthogonality-Orthogonal Complement.	12	Google Classroom & Google Meet	
Nov	IV	Theory of Matrices: Algebra of Matrices-Types of Matrices-Inverse of Matrix.	12	Google Classroom & Google Meet	
Dec/Jan	V	Theory of Matrices: Elementary Transformations-Rank of a Matrix-Simultaneous Linear Equations-Characteristic Equation and Cayley Hamilton Theorem-Eigen values and Eigen vectors.	12	Google Classroom & Google Meet	

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III - B.SC MATHEMATICS (SF)
LESSON PLAN
2021-2022


Sub. Code : 17M61

Title of the Paper: Complex Analysis

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Complex Numbers – Conjugation and Modulus- Inequalities – Square Root –Geometrical Representation of Complex Numbers – n^{th} Roots of Complex Numbers – Circles and Straight Lines – Regions in the Complex Plane	18	Chalk & Talk	
March	II	Functions of a Complex Variable- Limits – Theorems on Limit – Continuous Functions – Differentiability – The Cauchy - Riemann Equations – Analytic Functions - Harmonic Functions.	18	Chalk & Talk	
March/April	III	Bilinear Transformations –Invariant Points - Cross Ratio – Special Bilinear Transformation (i) which map real axis to real axis – (ii)Unit circle to unit circle –(iii)Real axis to unit circle.	18	Chalk & Talk	
April	IV	Complex Integration - Cauchy's Integral Theorem – Extensions of Cauchy's integral Theorem- Cauchy's integral formula -	18	Chalk & Talk	

		Derivatives of analytic functions - Morera's Theorem - Cauchy's inequality for $f(z_0)$ - Liouville's Theorem - Fundamental Theorem of Algebra-Maximum modulus theorem -Taylor's theorem - Laurent's theorem.			
May	V	Singular points - Essential Singularity - Meromorphic function - Principle of the Argument- Rouché's theorem - Fundamental Theorem of Algebra - Evaluation of Residue at a pole - Residue Theorem - Evaluation of Definite Integrals.	18	Chalk & Talk	


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III - B.SC MATHEMATICS (SF)
LESSON PLAN
2021-2022

Sub. Code : 17M62

Title of the Paper: Statistics - II

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	I Random Variables: Discrete Random Variables – Continuous Random Variables - Mathematical Expectations – Moment Generating Functions- Characteristic Function.	18	Chalk & Talk	
March	II	Some special distributions: Binomial Distributions – Poisson Distributions-Normal Distributions –Some More Continuous Distributions (Gamma distribution ,Chi Square distribution , Student's -t distribution, Snedecor's-F distribution and Fischer's, Z-distributions).	18	Chalk & Talk	
March/April	III	Test of significance (Large samples): Sampling – Sampling Distribution – Testing of Hypothesis – Procedure for Testing of Hypothesis for Large Sample.	18	Chalk & Talk	

April	IV	Test of Significance (Small samples): Test of significance based on t-distribution (t-test) - Test for significance based on F-test - Test for significance of an observed sample Correlation	18	Chalk & Talk	<i>SS</i>
May	V	Test based on χ^2 - distribution: χ^2 - Test- χ^2 - Test to test the goodness of fit- Test for independence of Attributes. Analysis of variance: One criterion of classification- two criteria of classification- Three criteria of Classification Latin squares.	18	Chalk & Talk	<i>SS</i>

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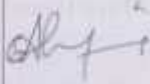
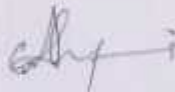
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III - B.SC MATHEMATICS (SF)
LESSON PLAN
2021-2022


Sub. Code : 17M63

Title of the Paper: Numerical Methods

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Algebraic and Transcendental Equations - Introduction - Iteration Method - Bisection Method - Regula Falsi method - Newton-Raphson Method Simultaneous Equations - Back substitution - Gauss Elimination Method - Gauss Jordan Elimination Method - Iterative methods- Gauss Jacobi Iteration Method - Gauss-Seidal Iteration Method .	18	Chalk & Talk	
March	II	Finite Differences - Difference operators- Forward Differences - Backward Differences - Central difference operators - Other Difference operators.	18	Chalk & Talk	
March/April	III	Interpolation - Newton's Interpolation Formula - Lagrange's Interpolation formula - Divided Differences - Newton's Divided	18	Chalk & Talk	

		differences formula - Inverse Interpolation.			
April	IV	Numerical Differentiation and Integration - Derivatives using Newton's forward difference formula - Derivatives using Newton's backward difference formula - Derivatives using central difference formula - Maxima and minima of the interpolating polynomial - Numerical integration - Newton-Cote's quadrature formula - Trapezoidal rule - Simpson's one third rule - Simpson's three eight rule.	18	Chalk & Talk	
May	V	Numerical Solutions of Ordinary Differential Equations - Taylor's Series Method - Picard's Method - Euler's Method - Runge-Kutta Methods.	18	Chalk & Talk	


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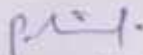
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LESSON PLAN
2021-2022

Sub. Code : 17AA61

Title of the Paper: Object Oriented Programming with C++

Total Hours : 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Beginning with C++ - Tokens - Expressions and Control structures.	12	Chalk & Talk	K. Karthiyani
March	II	Functions in C++ - Classes and Objects.	12	Chalk & Talk	K. Karthiyani
March/April	III	Constructors and Destructors - Operator overloading and data type conversions.	12	Chalk & Talk	K. Karthiyani
April	IV	Inheritance - Extending classes - Pointers	12	Chalk & Talk	K. Karthiyani
May	V	Virtual functions and Polymorphism - Managing console I/O operations - working with files.	12	Chalk & Talk	K. Karthiyani


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LESSON PLAN
2021-2022

Sub. Code : 17SEM61

Title of the Paper: Discrete Mathematics

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	Introduction- statements - Connectives	6	Chalk & Talk	
March	II	Atomic and compound statements- Well formed (statement) formulae - Truth table of a formula - Tautology- Tautological Implication and equivalence of formulae	6	Chalk & Talk	
March/April	III	Lattices-Some Properties of Lattices-New Lattices	6	Chalk & Talk	
April	IV	Modular and Distributive Lattices - Boolean Algebra	6	Chalk & Talk	
May	V	Recurrence -an introduction -Recurrence Relation - Worked Examples.	6	Chalk & Talk	

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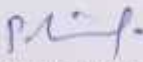
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LESSON PLAN
2021-2022

Sub. Code : 17SEM62

Title of the Paper: Combinatorics

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb/March	I	The Rules of Sum and Product	6	Chalk & Talk	S. Sripriya
March	II	Permutations - Combinations - Permutations and Combinations with Repetitions	6	Chalk & Talk	S. Sripriya
March/April	III	The Binomial Theorem - Pascal's Identity - Vander Monde's Identity	6	Chalk & Talk	S. Sripriya
April	IV	The Multinomial Theorem - Ramsey Number	6	Chalk & Talk	S. Sripriya
May	V	The Catalan Numbers - Stirling Numbers and Bell Numbers.	6	Chalk & Talk	S. Sripriya


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III - B.SC MATHEMATICS (SF)
LESSON PLAN
2021-2022

Sub. Code : 174VE6

Title of the Paper: Value Education

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Feb	I	Value education -need and important -objectives types of values-Nature and concept of moral education - value education as moral education	6	Chalk & Talk	<i>selvi</i>
Mar	II	Values of home-Role of women in decision making-Parental care-care for the aged family conflicts and resolution.	6	Chalk & Talk	<i>selvi</i>
Apr	III	Character formation towards positive personality- Truthless, Sacrifice, sincerity, self confident-altruism, tolerance-confident honesty and courage	6	Chalk & Talk	<i>selvi</i>
May	IV	Indian Religions- values in hindusim, Christianity, Buddhism, secularisen and commutac, Harmony	6	Chalk & Talk	<i>selvi</i>
June	V	Human Rights-Fundamental Rights, Human Rights act 1993 (amended 2006)Consumer Production act 1986, Right to information act 2005 productive laws for women - dowry prohibition act 1961.Domestic violence act2005	6	Chalk & Talk	<i>selvi</i>

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LESSON PLAN
2021-2022

DEPARTMENT OF MATHEMATICS
(PG – Odd & Even Semester)



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DEPARTMENT OF MATHEMATICS

I - M.Sc., Mathematics

LESSON PLAN


2021-2022

Sub. Code : 21OPM11

Title of the Paper: Abstract Algebra

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
August	I	Another Counting Principle - 1st, 2nd and 3rd parts of Sylow's Theorems - Double Coset - the normalizer of a group.	15	Google Classroom	S. Selvi
Sep	II	External and Internal direct Products - structure theorem for finite abelian groups Non isomorphic abelian groups polynomial rings	15	Google Classroom	S. Selvi
Oct	III	Polynomials over rational fields - the Eisenstein Criterion extension fields - roots of polynomials splitting	15	Google Classroom	S. Selvi
Nov	IV	More about roots simple extension - separable extension fixed fields - symmetric rational functions - normal extension Galois group - fundamental theorem of Galois theory	15	Google Classroom	S. Selvi
Dec	V	Solvable group - the commutator subgroup - Solvability by radicals Finite fields	15	Google Classroom	S. Selvi


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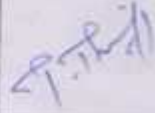
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2021-2022

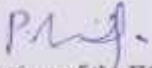
Sub. Code : 21OPM12

Title of the Paper: Real Analysis

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
August	I	The derivative of a real function - Mean Value Theorem - The continuity of derivatives - L' Hospital's Rule - Taylor's Theorem.	15	Google Classroom	
Sep	II	Differentiation of vector - valued functions: Definition and Existence of the Integral - Properties of the Integral. Integration and differentiation - Integration of vector- valued functions - Rectifiable curves.	15	Google Classroom	
Oct	III	Uniform convergence and Continuity- Uniform convergence and Integration-Uniform convergence and differentiation Equicontinuous Families of functions-The Stone-Weierstrass Theorem	15	Google Classroom	
Nov	IV	Power Series -The Exponential and Logarithmic Functions -The Trigonometric Functions-The Algebraic Completeness of the complex Field- Fourier series- The Gamma functions.	15	Google Classroom	

Dec	V	Integration-Primitive mappings-Partitions of unity change of variables - Differential forms - Simplexes and chains- Stokes theorem.	15	Google Classroom	
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DEPARTMENT OF MATHEMATICS
I - M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 21OPM13

Title of the Paper: Differential Equations

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
August	I	Introduction - Initial value problems for the homogeneous equation - Solutions of the homogeneous equation - The Wronskian and Linear independence - Reduction of the order of homogeneous equation - The Non homogeneous equation - Homogeneous equation with analytic coefficients - The Legendre Equation	18	Google Classroom	P. K. K.
Sep	II	Introduction - The Euler equation - Second order equations with regular singular points - An example - Second order Equations with regular singular points - The general case - Bessel Equation	18	Google Classroom	P. K. K.
Oct	III	Introduction - Equations with variables separated - Exact equations - The method of successive approximations - The Lipschitz condition - Convergence of successive approximations - Non-local existence of solutions - Equations with complex valued functions.	18	Google Classroom	P. K. K.
Nov	IV	Origins of first order partial differential Equations - Cauchy's problem for First order Equations - Linear equations of the first order - Integral surfaces passing through a given Curve - Surfaces orthogonal to given system of surfaces.	18	Google Classroom	P. K. K.

Dec	V	Cauchy's method of characteristics - Compatible systems of first order equations - Charpit's method - Special types of first order equations. The Jacobi's method- Applications of first order equations.	18	Google Classroom	R. P. J. H.
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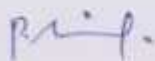
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LESSON PLAN
2021-2022

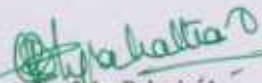
Sub. Code : 21OPM14

Title of the Paper: Differential Geometry

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
August	I	The thory of space curves – Arc length Tangent ,normal and binormal – curvature and torsion of the given curve as intersection of two surfaces- contact between curves and surfaces- involute-evolute-Fundamental existence theorem for space curves- Helices	18	Google Classroom	R.Mh
Sep	II	The metric local intrinsic properties- definition of surface curves on a surface-surface of revolution – Helicoids - direction coefficients – family of curves – Isometric lines	18	Google Classroom	R.Mh
Oct	III	Geodesics-canonical Geodesic equation-normal property of geodesic- existence theorem-geodesic parallels- geodesic curvature-gauss Bonnet theorem –gaussian curvature	18	Google Classroom	R.Mh
Nov	IV	The second fundamental form – Principle of curvature-line of curvature	18	Google Classroom	R.Mh
Dec	V	Developable-developable associated with space curves-developable associated with curves on a surface – Minimal surface –Ruled surface	18	Google Classroom	R.Mh


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LESSON PLAN
2021-2022

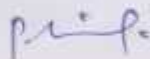
Sub. Code : 21OPME1A

Title of the Paper: Number Theory

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
August	I	Introduction - Divisibility - Greatest Common divisor - Prime numbers - The fundamental theorem of Arithmetic - The series of reciprocals of the Primes - The Euclidean algorithm - The greatest common divisor of more than two numbers.	18	Google Classroom	S. Sriprya
Sep	II	Introduction - The Mobius function $\mu(n)$ - The Euler totient function $\phi(n)$ - A Relation connecting ϕ and μ - A product formula for $\phi(n)$ - The Dirichlet product of arithmetical functions - Dirichlet inverses and the mobius inversion formula - The Mangoldt function $\Lambda(n)$ - Multiplicative functions - Multiplicative functions and Dirichlet Multiplication - The inverse of a completely multiplicative function - Liouville's function $\lambda(n)$ - The divisor functions $\sigma_r(n)$ - Generalized convolutions - Formal power series - The Bell series of an arithmetical function - Bell series and Dirichlet multiplication - Derivatives of an arithmetical functions - The Selberg Identity.	18	Google Classroom	S. Sriprya
Oct	III	Introduction - The big Oh notation - Asymptotic equality of functions - Euler's summation formula - Some elementary asymptotic formulas - The average order of $d(n)$ - The average order of the divisor functions $\sigma_r(n)$ - The average order of $\phi(n)$ - An application to the distribution of lattice points visible from the origin - The average order of	18	Google Classroom	S. Sriprya

		$\mu(n)$ and $\wedge(n)$ - The partial sums of a Dirichlet product - Applications to $\mu(n)$ and $\wedge(n)$ - Another identity for the partial sums of a Dirichlet product.			
Nov	IV	Introduction - Chebyshev's functions $\chi(x)$ and $\theta(x)$ - Congruences - Definition and basic properties of congruences - Residue classes and complete residue systems - Linear congruences - Reduced residue systems and Euler Fermat theorem - Polynomial congruences modulo p - Lagrange's theorem - Applications of Lagrange's theorem - Simultaneous linear Congruences - The Chinese Remainder theorem - Applications of the Chinese Remainder theorem - Polynomial congruences with prime power moduli - The Principle of cross classification - A decomposition property of reduced residue systems.	18	Google Classroom	S. Sriparvathi
Dec	V	Quadratic residues - Legendre's symbol and its properties - Evaluation of $(-1/p)$ and $(2/p)$ - The Jacobi symbol - Applications of Diophantine equations- Gauss sums and the Quadratic reciprocity law.	18	Google Classroom	S. Sriparvathi



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I- M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 21OPM21

Title of the Paper: Linear Algebra

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Linear Transformations-The Algebra of Linear Transformations Isomorphism - Representations of Transformations by Matrices - Linear Functionals.	15	Chalk & Talk	S. Selvi
Jan	II	Algebras-The Algebra of Polynomials - Polynomial Ideals - The Prime Factorization of a Polynomial - Commutative Rings - Determinant Functions.	15	Chalk & Talk	S. Selvi
Feb	III	Permutations and the Uniqueness of Determinants - Additional Properties of Determinants - Characteristic Values - Annihilating Polynomials	15	Chalk & Talk	S. Selvi
March	IV	Invariant Subspaces - Simultaneous Triangulations, Simultaneous Diagonalization - Direct- Sum Decompositions - Invariant Direct Sums - The Primary Decomposition Theorem	15	Chalk & Talk	S. Selvi
Apr	V	Cyclic Subspaces and Annihilators- Cyclic Decompositions and the Rational Forms- The Jordan Form.	15	Chalk & Talk	S. Selvi

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S. Selvi
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I - M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 21OPM22

Title of the Paper: Measure and Integration

Total Hours : 75

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Lebesgue Outer Measure-Measurable Sets - Measurable Functions	15	Chalk & Talk	T. Jeyaraj
Jan	II	Integration of non - negative functions- The General Integral - Integration of Series - Riemann and Lebesgue Integral.	15	Chalk & Talk	T. Jeyaraj
Feb	III	Measures and outer Measures-Extension of a Measure-Measure Spaces-Integration With Respect to a Measure	15	Chalk & Talk	T. Jeyaraj
March	IV	The L^p spaces -Convex functions - Jensen's Inequality-The Inequalities of Holder and Minkowski.	15	Chalk & Talk	T. Jeyaraj
April	V	Signed measures and the Hahn Decomposition - The Jordan Decomposition- The Radon - Nikodym theorem	15	Chalk & Talk	T. Jeyaraj


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I - M.Sc., Mathematics

LESSON PLAN


2021-2022

Sub. Code : 21OPM23

Title of the Paper: Graph Theory with Applications

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Definition and Examples of a Graph - Simple Graphs - Graphs Isomorphism- The Incidence and Adjacency Matrices - Subgraphs - Vertex Degrees - Paths and Connection- Cycles - Trees - Cut Edges and Bonds - Cut Vertices - Cayley's Formula(Applications) -The Connector Problem	18	Chalk & Talk	P. K. H.
Jan	II	Connectivity - Blocks (Applications) - Construction of Reliable Communication Networks	18	Chalk & Talk	P. K. H.
Feb	III	Euler Tours - Hamilton Cycles (Applications) - The Chinese Postman Problem -The Travelling Salesman Problem.	18	Chalk & Talk	P. K. H.
March	IV	Directed Graphs - Directed Paths - Directed Cycles (Applications) - A Job sequencing Problem - Designing an Efficient Computer Drum - Making a Road System One-way - Ranking the Participants in Tournament.	18	Chalk & Talk	P. K. H.
Apr	V	Flows-Cuts-The Max-Flow Min-Cut Theorem (Applications)- Menger's Theorems - Feasible Flows	18	Chalk & Talk	P. K. H.


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I -M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 21OPM24

Title of the Paper: Advanced Statistics - I

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Introduction - Set Theory - The Probability Set Function - Conditional Probability and Independence - Random Variables of the Discrete Type - Random Variables of the Continuous Type - Properties of the Distribution Function Expectation of a Random Variable Some Special Expectations - Chebyshev's Inequality	18	Chalk & Talk	
Jan	II	Distributions of Two Random Variables - Conditional Distributions and Expectations - The Correlation Coefficient - Independent Random Variables - Extension to Several Random Variables	18	Chalk & Talk	
Feb	III	The Binomial and Related Distributions - The Poisson Distribution - The Gamma and Chisquare Distributions - The Normal Distribution - The Bivariate Normal Distribution	18	Chalk & Talk	

March	IV	Sampling Theory - Transformations of Variables of the Discrete Type - Transformations of Variable of Continuous Type - The Beta, t and F Distributions - Extensions of the Change of Variables Technique - Distributions of Order Statistics The Moment Generating Function Technique - The Distributions of \bar{X} and nS^2/σ^2 - Expectations of Functions of Random Variables.	18	Chalk & Talk	<i>Shan</i>
April	V	Convergence in Distribution - Convergence in Probability - Limiting Moment Generating Functions - The Central Limit Theorem - Some Theorems on Limiting Distributions.	18	Chalk & Talk	<i>Shan</i>

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I - M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 21OPME2A

Title of the Paper: Fuzzy sets and logics

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Introduction ,Crisp Sets: An Overview, The Notation of Fuzzy Sets, Basic Concepts of Fuzzy Sets, Classical Logic: An Overview, Fuzzy Logic	18	Chalk & Talk	P. Ponnambalini
Jan	II	General Discussion, Fuzzy Complement, Fuzzy Union, Fuzzy Intersection, Combinations of Operations, General Aggregation Operations	18	Chalk & Talk	P. Ponnambalini
Feb	III	Crisp and Fuzzy Relations, Binary Relations, Binary Relations On a Single Set, Equivalence and Similarity Relations.	18	Chalk & Talk	P. Ponnambalini
March	IV	Compatibility or Tolerance Relations, Orderings	18	Chalk & Talk	P. Ponnambalini
April	V	Morphisms, Fuzzy Relation Equations	18	Chalk & Talk	P. Ponnambalini


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II- M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 21OPM31

Title of the Paper: Advanced Statistics - II

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Point Estimation-Confidence Interval for mean-Confidence intervals for difference of mean	18	Google Classroom	<i>Shaw</i>
July	II	Test of Statistical Hypothesis -Additional comments about statistical test-Chi-Square Test	18	Google Classroom	<i>Shaw</i>
August	III	Measures of quality estimation - A sufficient statistic for a parameter-Properties of a sufficient statistic -Completeness and uniqueness-The exponential class of probability density function -Functions of a parameter	18	Google Classroom	<i>Shaw</i>
Sep	IV	Bayesian Estimation-Fisher Information and the Rao-Cramer Inequality - Limiting Distributions of Maximum likelihood Estimations	18	Google Classroom	<i>Shaw</i>
Oct	V	Certain Best Tests-Uniformly Most powerful Test- Likelihood Ratio Test-The sequential probability Ratio Test	18	Google Classroom	<i>Shaw</i>

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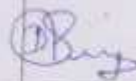

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LESSON PLAN
2021-2022

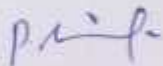
Sub. Code : 17PM32

Title of the Paper: Complex Analysis

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Complex Numbers – The Spherical Representation – Complex functions - Introduction to the Concept of Analytic Function – Limits and Continuity – Analytic Functions – Polynomials – Rational Functions – Elementary Theory of Power Series – Sequences – Series – Uniform Convergence – Power Series – Abel's Limit Theorem.	18	Google Classroom	
July	II	Analytic Functions as Mappings: Elementary Point Set Topology- Sets and Elements – Metric Spaces – Connectedness – Compactness – Continuous Functions – Topological Spaces. Conformality: Arcs and Closed Curves – Analytic Functions in Regions – Conformal Mapping – Length and Area. Linear Transformations: The Linear Group – The Cross Ratio – Symmetry – Oriented Circles – Families of Circles.	18	Google Classroom	
August	III	Complex Integration-Fundamental Theorems: Line Integrals – Rectifiable Arcs – Line Integrals as Functions of Arcs – Cauchy's Theorem for a Rectangle – Cauchy's Theorem in a Disk – Cauchy Integral formula: The Index of a point with respect to a Closed Curve – The Integral Formula – Higher Derivatives.	18	Google Classroom	

Sep	IV	Local Properties of Analytical Functions - Removable Singularities - Taylor's Theorem - Zeros and Poles - The Local Mapping - The Maximum Principle - The General form of Cauchy's Theorem - Chains and Cycles - Simple Connectivity - Homology - The General Statement of Cauchy's Theorem - Proof of Cauchy's Theorem - Locally Exact Differentials.	18	Google Classroom	
Oct	V	The Calculus of Residues - The Residue Theorem - The Argument Principle - Evaluation of Definite Integrals - Harmonic Functions - Definition and Basic properties - The Mean Value Property - Poisson's Formula - Schwarz's Theorem - The Reflection Principle - Series and product developments - Power Series Expansions- Weierstrass's Theorem - The Taylor Series - The Laurent Series.	18	Google Classroom	



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II-M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 17PM33

Title of the Paper: Mechanics

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Mechanics of a particle - Mechanics of a system of particles -constraints -D'Alembert's principle of Lagrange's equation - velocity dependent potentials and the dissipation function -simple applications formulation	18	Google Classroom	<i>P. P. Sundar</i>
July	II	Hamilton's principle - Some techniques of the calculus of variations.	18	Google Classroom	<i>P. P. Sundar</i>
August	III	Derivation of Lagrange's equations from Hamilton's principle - Extension of Hamilton's principle to nonholonomic systems - Advantages of a variational principle formulation - Conservation theorems and symmetry properties.	18	Google Classroom	<i>P. P. Sundar</i>
Sep	IV	Reduction to the equivalent one- body problem - The equations of motion and first integrals - The equivalent one-dimensional problem and classification of orbits - The virial theorem - The differential equation for the orbit and integrable power-law potentials - Conditions for closed orbits (Bertrand's theorem).	18	Google Classroom	<i>P. P. Sundar</i>

Oct	V	The Kepler Problem: Inverse square law of force - The motion in time in the Kepler problem - The Laplace-Runge-Lenz vector.	18	Google Classroom	<i>P.P. Thakur</i>
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II - M.Sc., Mathematics
LESSON PLAN
2021-2022

Sub. Code : 17PM34

Title of the Paper: Topology

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Topological Spaces - Basis for a Topology - The Order Topology - The Product Topology on $X \times Y$ - The Subspace Topology - Closed Sets and Limit Points .	18	Google Classroom	
July	II	Continuous Functions - The Product Topology - The Metric Topology - The Metric Topology(continued)	18	Google Classroom	
August	III	Connected Spaces - Connected Subspaces of the Real Line	18	Google Classroom	
Sep	IV	Compact Spaces - Compact Subspaces of the Real Line - Limit Point Compactness.	18	Google Classroom	
Oct	V	The Countability Axioms - The Separation Axioms - Normal Spaces -The Urysohn Lemma - The Urysohn Metrization Theorem.	18	Google Classroom	

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LESSON PLAN
2021-2022

Sub. Code : 17PEMEA3

Title of the Paper: Fuzzy Sets and Logic

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Introduction, Crisp Sets: An Overview, The Notation of Fuzzy Sets, Basic Concepts of Fuzzy Sets, Classical Logic: An Overview, Fuzzy Logic.	18	Google Classroom	K. Saranya
July	II	General Discussion, Fuzzy Complement, Fuzzy Union, Fuzzy Intersection, Combinations of Operations, General Aggregation Operations.	18	Google Classroom	K. Saranya
August	III	Crisp and Fuzzy Relations, Binary Relations, Binary Relations On a Single Set, Equivalence and Similarity Relations.	18	Google Classroom	K. Saranya
Sep	IV	Compatibility or Tolerance Relations, Orderings.	18	Google Classroom	K. Saranya
Oct	V	Morphisms, Fuzzy Relation Equations.	18	Google Classroom	K. Saranya

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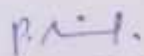
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LESSON PLAN
2021-2022

Sub. Code : 21OPMNM2

Title of the Paper: Teaching and Research Aptitude Paper - II

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Sources of data Acquisition of Data - Discrimination of Data	6	Chalk & Talk	selvi
Jan	II	Collection of data - Representation of data - Interpretation of data	6	Chalk & Talk	selvi
Feb	III	Application of Information Technology in Modern World - Data and Information - Value Of Information - Quality of Information - Aims of Information - Need and Importance of Information - Role of Information.	6	Chalk & Talk	selvi
March	IV	Evolution of Computer - Computer Generations Structure of Modern Computer - Objectives of ERNET Terminology Related to Computer.	6	Chalk & Talk	T. Thirugan
April	V	Value Education - Scriptural Value System and Operational Value System - Type of Values - Value system and Mental Health - The need of Value Education - Value and Science.	6	Chalk & Talk	T. Thirugan


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LESSON PLAN
2021-2022

Sub. Code : 17PM41

Title of the Paper: Advanced Topology

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Local Compactness - The Tychonoff Theorem - The Stone-Cech Compactification	18	Chalk & Talk	
Jan	II	Local Finiteness - The Nagata - Smirnov Metrization Theorem.	18	Chalk & Talk	
Feb	III	Complete Metric Spaces - A Space-Filling Curve - Compactness in Metric Spaces.	18	Chalk & Talk	
March	IV	Pointwise and Compact Convergence - Ascoli's Theorem.	18	Chalk & Talk	
April	V	Baire Spaces - A Nowhere - Differentiable Function.	18	Chalk & Talk	

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2021-2022

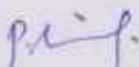
Sub. Code : 17PM42

Title of the Paper: Combinatorial Mathematics

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Introduction, rules of sum and product, Permutations and Combinations, Distributions of Distinct Objects, Distributions of Non-Distinct Objects, Generating Functions -Introduction, Generating Functions for Combinations.	18	Chalk & Talk	
Jan	II	Enumerators for Permutations, Distributions of Distinct Objects into Non distinct cells, Partitions of Integers, Recurrence Relation-Introduction- Linear Recurrence Relations with Constant Coefficients.	18	Chalk & Talk	
Feb	III	Solution by the Technique of Generating Functions, A Special Class of Nonlinear Difference Equations, Recurrence Relation with Two Indices, The principle of Inclusion and Exclusion-Introduction-The principle of Inclusion and Exclusion, The General Formula- Derangements.	18	Chalk & Talk	

March	IV	Permutations with Restrictions on Relative Positions- Polya's Theory of Counting- Equivalence Classes under a Permutation Group. Equivalence Classes of Functions- Weights and Inventories of Functions- Polya's Fundamental Theorem.	18	Chalk & Talk	A.M.
April	V	Block Designs- Introduction - Complete Block Designs- Orthogonal Latin Squares.	18	Chalk & Talk	A.M.


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LESSON PLAN
2021-2022

Sub. Code : 17PM43

Title of the Paper: Functional Analysis

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	The definition and examples of Banach Spaces- Continuous linear transformation -The Hahn Banach theorem.	18	Chalk & Talk	
Jan	II	The Natural imbedding of N and N^{**} - The Open Mapping Theorem -The Conjugate of an Operator.	18	Chalk & Talk	
Feb	III	The definition and some simple Properties - Orthogonal Complements - Orthonormal Sets.	18	Chalk & Talk	
March	IV	The Conjugate Space H^* - The Adjoint of an Operator- Self Adjoint Operators- Normal and Unitary Operators - Projections.	18	Chalk & Talk	
April	V	The Weierstrass Approximation Theorem - The Stone Weierstrass Theorems - Locally Compact Hausdorff Spaces - The Extended Stone-Weierstrass Theorems	18	Chalk & Talk	

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LESSON PLAN
2021-2022

Sub. Code : 17PM44

Title of the Paper: Operations Research

Total Hours : 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Network Definitions - Minimal Spanning Tree Algorithm - Shortest Route Problem - Examples of the Shortest -Route Applications - Shortest Route Algorithms- Maximal Flow Model - Enumeration of Cuts - Maximal Flow Algorithm.	18	Chalk & Talk	
Jan	II	Minimum Cost Capacitated Flow Problem - Network Representation - Linear Programming Formulation -Capacitated Network Simplex Algorithm -CPM and PERT- Networks Representations - Critical Path Computations - Construction of the Time Schedule.	18	Chalk & Talk	
Feb	III	Elements of the Queuing Model - Role of Exponential Distributions - Pure Birth and Death Models-Pure Birth Model- Pure Death Model - Generalized Poisson Queuing Model - Specialized Poisson Queues - Steady - State Measures of Performance - Single - Server Models - Multiple - Server Models - Machine Servicing Model (M/M/R) : (GD/K/K), P < K.	18	Chalk & Talk	

March	IV	Unconstrained Problems - Necessary and Sufficient Conditions - The Newton- Raphson Method - Constrained Problems - Equality Constraints - Inequality Constraints.	18	Chalk & Talk	<i>S.S.</i>
April	V	Unconstrained Algorithms - Direct Search Method - Gradient Method - Constrained Algorithms - Separable Programming - Quadratic Programming - Geometric Programming - Stochastic Programming - Linear Combinations Method.	18	Chalk & Talk	<i>S.S.</i>

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