LESSON PLAN
2022-2023

DEPARTMENT OF MATHEMATICS

(UG –Odd Semester)

E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE
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DEPARTMENT OF MATHEMATICS
I - B.SC MATHEMATICS
LESSON PLAN
2022-2023

Sub. Code : 22OUMA11
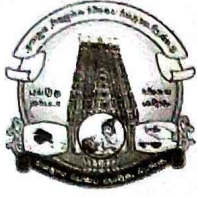**Title of the Paper: Calculus**
Total Hours : 75
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Successive differentiation -The nth derivative - standard results - Trigonometrically transformation - Formation of equations involving derivatives - Leibnitz formula for the nth derivative of a product.Envelopes- Curvature-Circle, radius and center of curvature- Cartesian formula for the radius of curvature- The coordinates of the center of curvature.	15	Chalk & Talk	S S S.Selvi
August	II	Radius of curvature when the curve is given in polar coordinates - p-r equation – pedal equation of a curve.	15	Chalk & Talk	S.Selvi
Sep	III	Successive differentiation -The nth derivative - standard results - Trigonometrically transformation - Formation of equations involving derivatives - Leibnitz formula for the nth derivative of a product. Envelopes- Curvature-Circle, radius and center of curvature- Cartesian formula for the radius of curvature- The coordinates of the center of curvature.	15	Chalk & Talk	S.Selvi
Oct	IV	Radius of curvature when the curve is given in polar coordinates - p-r equation – pedal equation of a curve.	15	Chalk & Talk	S.Selvi
Nov	V	Jacobian - Change of variables in double and triple integrals	15	Chalk & Talk	S.Selvi

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Sub. Code : 22OUMA12
Title of the Paper: Theory of Equation and Trigonometry
Total Hours : 75
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Theory of Equations: Formation of equations – Relation between roots and coefficients – Sum of the powers of the roots of an equation.	15	Chalk & Talk	A.Manickavally
August	II	Reciprocal equations, Transformation of equations, Removal of terms- Multiple roots. Nature and position of roots - Cubic equations.	15	Chalk & Talk	A.Manickavally
Sep	III	Expression for $\sin n\theta$, $\cos n\theta$, $\tan n\theta$, $\sin^n\theta$, $\cos^n\theta$. Expansion of $\sin\theta$, $\cos\theta$, $\tan\theta$ in powers of θ	15	Chalk & Talk	A.Manickavally
Oct	IV	Hyperbolic functions: definition-Inverse hyperbolic functions. Theory of Equations: Formation of equations – Relation between roots and coefficients	15	Chalk & Talk	A.Manickavally
Nov	V	Sum of the powers of the roots of an equation	15	Chalk & Talk	A.Manickavally

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Sub. Code : 22O2MAIDI
Title of the Paper: Mathematics for Competative Examination Paper-I
Total Hours : 30
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Numbers and Simplifications	6	Chalk & Talk	S. Selvi
August	II	Average & Problems on Numbers	6	Chalk & Talk	S. Selvi
Sep	III	Problems on Ages	6	Chalk & Talk	S. Selvi
Oct	IV	Percentage, Profit and Loss	6	Chalk & Talk	S. Selvi
Nov	V	Square roots and cube roots	6	Chalk & Talk	S. Selvi

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II - B.SC MATHEMATICS
LESSON PLAN
2022-2023

Sub. Code : 21M31
Title of the Paper: Modern Algebra
Total Hours : 90
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Groups – Definition and Example – Elements of properties of groups – equation and definition of a group – permutation groups – subgroups	18	Chalk & Talk	R.M R. Mau.
August	II	Cyclic groups – order of an element – cosets and lagrangean theorem – normal rule – and quotient groups	18	Chalk & Talk	R. Mu.
Sep	III	Isomorphism – homeomorphism – rings – definition and example – Elementary properties of rings	18	Chalk & Talk	R. Mu.
Oct	IV	Isomorphism – Types of rings – Characteristics of a ring – Subrings	18	Chalk & Talk	R. Mu
Nov	V	Ideals - Quotient rings – Maximal and prime ideals.	18	Chalk & Talk	R. Mu.

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II - B.SC MATHEMATICS
LESSON PLAN
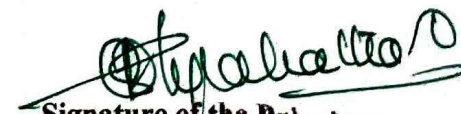**2022-2023**

Sub. Code : 21ME3A
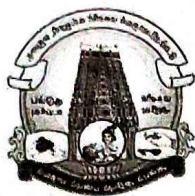Title of the Paper: Operations Research
Total Hours : 60
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Mathematical formulation of the problem – Graphical solution method – general linear programming problem- The computational procedure – Use of artificial variable – Degeneracy in LPP	12	Chalk & Talk	
August	II	General primal – Dual pair – formulating a dual problem – primal – Dual pair in matrix form – Duality and simplel method – Dual Simplex method.	12	Chalk & Talk	
Sep	III	LP formulation of the Transportation problem – Solution of a Transportation problem – Finding an initial basic feasible solution – Test for optimality – Transportation algorithm – mathematical formulation of the problem – Solution methods of Assignment problem	12	Chalk & Talk	
Oct	IV	Games and Strategies – Two person zero - Sum games – some basic terms – The maximin – Minimax principle – Games without saddle points – Mixed strategies – Graphical solution of 2Xn and mX2 games – Dominance property	12	Chalk & Talk	
Nov	V	Network and basic components – Rules of Network construction time calculation in network critical path analysis	12	Chalk & Talk	

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LESSON PLAN
2022-2023

Sub. Code : 21SEM31
Title of the Paper: Application of Differential Equation
Total Hours : 30
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Orthogonal Trajectories	6	Chalk & Talk	R. M
August	II	Growth & Decay	6	Chalk & Talk	
Sep	III	Continuous compound interest – The Brachistochrone Problem	6	Chalk & Talk	
Oct	IV	Tautochronous Property of the cycloid simple electric circuits	6	Chalk & Talk	
Nov	V	Falling bodies – Simple harmonic motion	6	Chalk & Talk	

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III - B.SC MATHEMATICS
LESSON PLAN
2022-2023-Regular

Sub. Code : 17M51
Title of the Paper: Modern Analysis
Total Hours : 75
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Countable Sets - Uncountable Sets – Inequalities of Holder and Minkowski - **Metric Spaces** -Definitions and - Open Ball in a Metric Dense Sets – **Complete Metric Spaces**- Completeness - Baire's Category Theorem.	15	Chalk & Talk	
August	II	**Continuity** – Continuity - Homeomorphism – Uniform Continuity.Countable Sets - Uncountable Sets – Inequalities of Holder and Minkowski - Open Ball in a Metric Space – Open Sets – Subspace - Interior of a set	15	Chalk & Talk	
Sep	III	**Complete Metric Spaces**- Completeness - Baire's Category Theorem.	15	Chalk & Talk	
Oct	IV	**Connectedness** - Definition and Examples - Connected Subsets of **R** - Connectedness and Continuity	15	Chalk & Talk	
Nov	V	**Connectedness** - Definition and Examples - Connected Subsets of **R** - Connectedness and Continuity	15	Chalk & Talk	

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LESSON PLAN
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Sub. Code : 17M52
Title of the Paper: Statistics-I
Total Hours : 75
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Moments, Skewness and Kurtosis:Moments-Skewness-Kurtosis-Curve fitting a straight line-Fitting a second Degree Parabola. Correlation and Regression: Correlation-Rank Correlation-Regression-Correlation Coefficient for a Bivariate frequency Distribution.	15	Chalk & Talk	
August	II	Theory of Attribute: Theory of attributes-Attributes consistency of Data-Independence and Association of data. 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	Chalk & Talk	

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Sep	III	Probability: Probability-conditional Probability Moments, Skewness and Kurtosis:Moments-Skewness-Kurtosis-Curve fitting a straight line-Fitting a second Degree Parabola.	15	Chalk & Talk	C. Hemlll
Oct	IV	Correlation and Regression: Correlation-Rank Correlation-Regression-Correlation Coefficient for a Bivariate frequency Distribution. Theory of Attribute: Theory of attributes-Attributes consistency of Data-Independence and Association of data.	15	Chalk & Talk	C. Hemath
Nov	V	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	Chalk & Talk	C. Hemle

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Sub. Code : 17M53
Title of the Paper: Dynamics
Total Hours : 60
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	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	Chalk & Talk	R.R. R- Revathi
August	II	**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	Chalk & Talk	R - Revathi

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Sep	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	Chalk & Talk	R. Revathy.
Oct	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	Chalk & Talk	R. Revathy
Nov	V	**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	Chalk & Talk	R. Revathy

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LESSON PLAN
2022-2023

Sub. Code : 17ME5A
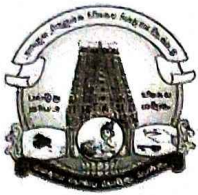**Title of the Paper: Linear Algebra**
Total Hours : 60
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Vector Spaces:Definition and Examples-Subspaces-Linear Transforamations. Vector Space: Span of a set –Linear Independence-Basis and Dimensions-Rank and Nullity-Matrix of Linear Transformation.	12	Chalk & Talk	R. Nhul
August	II	Inner Product space-Definition of Examples-Orthoganality-Orthogonal Complement. Theory of Matrices: Algebra of Matrices-Types of Matrices-Inverse of Matrix.	12	Chalk & Talk	R. Nhu
Sep	III	Theory of Matrices: Elementary Transformations-Rank of a Matrix-Simultaneous Linear Equations-Characteristic Equation and Cayley Hamilton Theorem-Eigen values and EigenVector Spaces:Definition and Examples-Subspaces-Linear Transforamations.	12	Chalk & Talk	R. Nhu
Oct	IV	Vector Space: Span of a set –Linear Independence-Basis and Dimensions-Rank and Nullity-Matrix of Linear Transformation. Inner Product space-Definition of Examples-Orthoganality-Orthogonal Complement.	12	Chalk & Talk	R. Nhu
Nov	V	Theory of Matrices: Algebra of Matrices-Types of Matrices-Inverse of Matrix.	12	Chalk & Talk	R. Nhu

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DEPARTMENT OF MATHEMATICS
III - B.SC MATHEMATICS
LESSON PLAN
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Sub. Code : 17AA51
Title of the Paper: Programming in C
Total Hours : 60
Stream: Self-finance

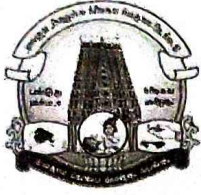| Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Overview of C- Constant, Variable and Data Types. Operatorsand Expressions- Decision Making and Branching	12	Chalk & Talk	
August	II	Arrays-Character Arrays and StringsUser-defined Functions	12	Chalk & Talk	
Sep	III	Structures and Unions – Pointers Overview of C- Constant, Variable and Data Types.	12	Chalk & Talk	
Oct	IV	Operatorsand Expressions- Decision Making and Branching Arrays-Character Arrays and Strings	12	Chalk & Talk	
Nov	V	User-defined Functions	12	Chalk & Talk	

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Sub. Code : 17AA5P
Title of the Paper: C Practicals
Total Hours : 30
Stream: Self-finance

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

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DEPARTMENT OF MATHEMATICS
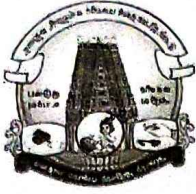**III - B.SC MATHEMATICS**
LESSON PLAN
2022-2023

Sub. Code : 17SEM51
Title of the Paper: Vector Calculus
Total Hours : 30
Stream: Self-finance

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

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Sub. Code : 17SEM52
Title of the Paper: Quantitative Aptitude
Total Hours : 30
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Problems on Numbers & Problems on Ages Profit and Loss-Ratio and Proportion	6	Chalk & Talk	
August	II	Time and Work-Time and Distance Averages - Probability	6	Chalk & Talk	
Sep	III	Permutations and Combinations – Heights & Distance Problems on Numbers & Problems on Ages	6	Chalk & Talk	
Oct	IV	Profit and Loss-Ratio and Proportion Time and Work-Time and Distance	6	Chalk & Talk	
Nov	V	Averages - Probability	6	Chalk & Talk	

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Sub. Code : 174EV5
Title of the Paper: Environmental Studies
Total Hours : 30
Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Introduction – Environmental Studies – Nautre, scope, importance - Natural resources – Forest resources Deforestration – Aforestration – Water Resources Eco system – concept of structure of functions – energy flow – food chain – food web – Ecological pyramid types of ecosystem – aquation and terrestrial	6	Chalk & Talk	S. Selvi
August	II	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	Chalk & Talk	S. Selvi
Sep	III	Introduction – Environmental Studies – Nautre, scope, importance - Natural resources – Forest resources Deforestration – Aforestration – Water Resources Eco system – concept of structure of functions – energy flow – food chain – food web – Ecological pyramid types of ecosystem – aquation and terrestrial	6	Chalk & Talk	S. Selvi
Oct	IV	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	Chalk & Talk	S. Selvi
Nov	V	Social issues – Unsustainable to sustainable development – Climate change – Green house effect - Global warming – Population – Explosion Women and child welfare relating to environment	6	Chalk & Talk	S. Selvi

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