### E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE

An Autonomous Institution -Affiliated to Madurai Kamaraj University Re-accredited (3<sup>rd</sup> Cycle) with Grade A<sup>+</sup> & CGPA 3.51 by NAAC



# **LESSON PLAN 2022-2023**

## DEPARTMENT OF MATHEMATICS

(UG -Even Semester)



## I - B.SC MATHEMATICS

#### LESSON PLAN 2022-2023 (Even)

Sub. Code: 22OUMA21

Title of the Paper: Analytical Geometry of 3-Dimension and Vector Calculus

Total Hours: 75 Stream: Regular

Month	Unit	<b>Description Of The Syllabus</b>	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Equation of a plane - Angle between two planes- Angle Bisectors of two planes	15	Chalk & Talk	S. Maningala.
Jan	п	Equation of the straight line. A plane and a Line.	15	Chalk & Talk	A. Maningalar
Feb	ш	Sphere-Equation of a sphere- Tangent line and Tangent plane-Section of a sphere	15	Chalk & Talk	A. Maningales
March	IV	Differentiation of Vectors- Gradient-Divergence and Curl	15	Chalk & Talk	A. Maningalu
April	v	Line Integrals -Surface Integrals -Theorems of Green, Gauss and Stokes	15	Chalk & Talk	A. Maningle

Pirif.

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
EM.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014



#### I - B.SC MATHEMATICS LESSON PLAN 2022-2023

Sub. Code: 22OUMA22

Title of the Paper: Differential Equations

Total Hours: 75 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Exact differential equations- Integrating factors – Equations of first order and higher degree.	15	Chalk & Talk	prie
Jan	п	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	p.r.f.
Feb	ш	Simultaneous linear differential equations- Total differential equations.	15	Chalk & Talk	p.s.o.
March	IV	Laplace Transform-Inverse Laplace Transform - Solution of differential equations using Laplace Transform.	15	Chalk & Talk	p.r.p.
April	v	Formation of Partial differential equations-First order partial differential equations- Methods of solving first order partial differential equations.	15	Chalk & Talk	prof.

Signature of the HOD

Signature of the Principal PRINCIPAL INCIPAL INCIPAL MADURAI-625 014



#### I - B.SC MATHEMATICS LESSON PLAN 2022-2023

Sub. Code: 22OUMAID2

Title of the Paper: Mathematics for Competitive Examinations - II

Total Hours: 30 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Ratio and Proportions	6	Chalk &Talk	R. Revelly,
Jan	п	Time and work, Time and Distance	6	Chalk &Talk	R-Revally?
Feb	ш	Simple interest and Compound interest	6	Chalk &Talk	R. Revally.
March	IV	Logarithms	6	Chalk &Talk	R-Revally
April	v	Calendar	6	Chalk &Talk	R. Revally.

p.r.p.

Signature of the HOD

Signature of the Principal

PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE

MADURAI-625 014

Mer.



## II - B.SC MATHEMATICS

#### LESSON PLAN 2022-2023

Sub. Code: 21M41

Title of the Paper: Graph Theory

Total Hours: 90 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Graphs and subgraphs Defintion and Examples Degrees- Subgraphs - Isomorphism - Independent sets and coverings - Matrices - Operations on Graphs	18	Chalk & Talk	R.Mu
Jan	п	Connectedness Walks Trails and Paths – Connectedness and Components – Blocks – Continuity – Some Applications – Connector problem – Shortest Path problem	18	Chalk & Talk	R. Nhe
Feb	ш	Eulerian and Hamiltonian Graphs: Eulerian Graphs – Hamiltonian Graphs – Trees Characterization of trees- Centre of a Tree		Chalk & Talk	R.Mu
March	IV	Planarity: Defintion and properties Characterization of Planar graphs Thickness Crossing and outer planarity	18	Chalk & Talk	1. Mir
April	v	Colourability: Chromatic number and Chromatic Index – Five colour theorem – Four colour theorem Chromatic polynomials.	18	Chalk & Talk	R. Nhe.

p.r.f.

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014



## DEPARTMENT OF MATHEMATICS II - B.SC MATHEMATICS LESSON PLAN

2022-2023

Sub. Code: 21ME4A
Title of the Paper: Statics

Total Hours: 60 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Forces acting at a point – Resultat 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	R.R. Sulmy
Jan	п	Resolution of a force – Components of a force along two given directions – Theorem on resolved parts – Resultant of any number of forces and co-planar forces acting at a point: Graphical method and Analytical method – Condition of equilibrium of any number of forces acting upon a particle	12	Chalk & Talk	R.R. Enhuy
Feb	ııı	Parallel forces and moments – Resultant of two like and unlike parallel forces acting on a rigid body conditions of equilibrium of three coplanar forces of two parallel forces – Moment of a force Varigon's theorem	12	Chalk & Talk	R.R. holy

March	IV	Couples – Equilibrium of two couples – Equivalence of two couples in parallel planes – Representation of a couple by a vector – Resultant of coplanar cuples – Resultant of a Couple and a force.	1	Chalk & Talk	R. R. Lunge
April	v	Friction- Definition and Experimental friction – Laws of friction – Friction on a passive force – coefficient of friction angle of friction – cone of friction – friction on inclined planes – simple problems	12	Chalk & Talk	R.P. Luya

pup.

Signature of the HOD

PRINCIPAL I/C
E.M.G. YADAVA-WOMEN'S COLLEGE
MADURAI-625 014



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

## DEPARTMENT OF MATHEMATICS II - B.SC MATHEMATICS

### LESSON PLAN 2022-2023

Sub. Code: 21SEM41

Title of the Paper: Analytical Geomentry 3-Dimension

Total Hours: 30 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Equation of a plane – Angle between two planes – Angle bisectors of two planes	6	Chalk & Talk	A. Maninegalai
Jan	п	Equation of the Straight line – A plane and a line	6	Chalk & Talk	A. Maninegala.
Feb	ш	Sphere – equation of a sphere – Tangent line and Tangent plane – Section of a sphere	6	Chalk & Talk	A. Maningolai
March	IV	Differentiation of Vectors – Gradient – Divergent and Curl	6	Chalk & Talk	A. Maningala.
April	v	Line Integrals - Surface Integrals - Theorems of Green, Gauss and Stokes	6	Chalk & Talk	A. Maninegales

Signature of the HOD

Signature of the Principal PRINCIPAL I/C EM.G. YADAVA WOMEN'S COLLEGE MADURAI-625 014



## III - B.SC MATHEMATICS

## LESSON PLAN

2022-2023

Sub. Code: 17M61

Title of the Paper: Complex Analysis

Total Hours: 90 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Complex Numbers – Conjugation and Modulus- Ineuqalities – Square Root – Geometrical Representation of Complex Numbers – n <sup>th</sup> Roots of Complex Numbers – Circles and Straight Lines – Regions in the Complex Plane 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. drhunge
Jan	п	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-hhuge
Feb	ш	Complex Numbers  Conjugation and Modulus- Ineuqalities – Square Root – Geometrical Representation	18	Chalk & Talk	R.K. Enmy

March	IV	Complex Integration - Cauchy's Integral Theorem - Extensions of Cauchy's Integral Theorem-Cauchy's integral formula - Derivatives of analytic functions - Morera's Theorem - Cauchy's inequality for f <sup>n</sup> (z <sub>0</sub> ) - Liouville's Theorem - Fundamental Theorem of Algebra-Maximum modulus theorem - Taylor's theorem - Laurent's theorem.	18	Chalk & Talk	R.R. dunya
April	V	Singular points — Essential Singularity — Meromorphic function — Principle of the Argument — Rouche's theorem — Fundamental Theorem of Algebra — Evaluation of Residue at a pole — Residue Theorem — Evaluation of Definite Integrals.	18	Chalk & Talk	R.R. Inhuya

P.M.

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625-014



## III - B.SC MATHEMATICS LESSON PLAN

2022-2023

Sub. Code: 17M62

Title of the Paper: Statistics - II

Total Hours: 90 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	I Random Variables: Discrete Random Variables – Continuous Random Variables - Mathematical Expectations – Moment Generating Functions- Characteristic Function. 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-	18	Chalk & Talk	R. R. Chruys.
Jan	ш	distributions).  Test of significance (Large samples): Sampling — Sampling Distribution — Testing of Hypothesis — Procedure for Testing of Hypothesis for Large Sample. 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	Rep. Chings

Feb	m	Test based on χ² - distribution: χ² -Test- χ² - 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.  I Random Variables: Discrete Random Variables - Continuous Random Variables - Mathematical Expectations - Moment Generating Functions-Characteristic Function.	18	Chalk & Talk	R.R. Arlunga
March	IV	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).  Test of significance (Large samples): Sampling — Sampling Distribution — Testing of Hypothesis — Procedure for Testing of Hypothesis for Large Sample.	18	Chalk & Talk	R-R-dilinge
April	v	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. Chunge

P.N.A

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014

Levis.



## III - B.SC MATHEMATICS

LESSON PLAN 2022-2023

Sub. Code: 17M63

Title of the Paper: Numerical Methods

Total Hours: 90 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec		Algebraic and Transcendental			
		<b>Equations</b> - Introduction - Iteration	with police in	To appropria	
		Method - Bisection Method - Regula	3 10	The Taky II	31.2
		Falsi method Newton- Raphson			
		Method Simultaneous Equations -		L bert	
		Back substitution - Gauss Elimination			
		Method – Gauss Jordan Elimination	Topic of the later	do his	
	G <sub>b</sub>	Method - Iterative methods- Gauss	18	Chalk &	0M 1 1
	1	Jacobi Iteration Method - Gauss-	10	Talk	Colon 1
	1	Seidal Iteration Method.	and the state of		
		Finite Differences -Difference		A castiffiche	
		operators-Forward Differences -	retailed to	CAPTER TOTAL	pelita hagi and a second
		Backward Differences – Central	Sec. 14.	a blob con	
		difference operators - Other	September 1994	Name of the African	
		Difference operators.	reept	kata din sula	

Jan	n	Interpolation - Newton's Interpolation Formula - Lagrange's Interpolation formula - Divided Differences - Newton's Divided differences formula - Inverse Interpolation.  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	M
Feb	ш	Numerical Solutions of Ordinary Differential Equations — Taylor's Series Method — Picard's Method — Euler's Method — Runge-Kutta Methods.  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	alfi
March	IV	Finite Differences – Difference operators-Forward Differences – Backward Differences – Central difference operators - Other Difference operators.  Interpolation - Newton's Interpolation Formula - Lagrange's Interpolation formula - Divided Differences - Newton's Divided differences formula – Inverse Interpolation.	18	Chalk & Talk	Afri

April V	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	Afri
---------	--	----	-----------------	------

P.L.P.

Signature of the HOD

PRINCIPALI/C
E.M.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014



# PARTMENT OF MATHEMATICS III - B.SC MATHEMATICS LESSON PLAN 2022-2023

Sub. Code: 17AA61

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

**Total Hours: 60** 

Stream: Regular & Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Beginning with C++ - Tokens - Expressions and Control structuresFunctions in C++ - Classes and Objects.	12	Chalk & Talk	A. Maninegaler
Jan	п	Constructors and Destructors – Operator overloading and data type conversions. Inheritance - Extending classes - Pointers	12	Chalk & Talk	A. Maniregalar
Feb	ш	Virtual functions and Polymorphism - Managing console I/O operations - working with files.  Beginning with C++ - Tokens - Expressions and Control structures.	12	Chalk & Talk	A. Maninegales
March	IV	Functions in C++ - Classes and Objects. Constructors and Destructors — Operator overloading and data type conversions.	12	Chalk & Talk	A. Maninegalin
April	v	Inheritance - Extending classes - Pointers	12	Chalk & Talk	A. Maniney ala.

P.r.y.

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
EMG. YADAVA WOMEN'S COLLEGE
MADURAI-625 014

26



## DEPARTMENT OF MATHEMATICS III - B.SC MATHEMATICS

#### **LESSON PLAN** 2022-2023

Sub. Code: 17AA6P

Title of the Paper: C++ Practicals

Total Hours: 30 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Program to convert the value of Fahrenheit into Celcius - program to calculate the Standard Deviation - program to display the numbers using for loop-Program to check whether the given number is a palindrome - program to calculate the factorial of a given number using recursion function	6	PPT & Lab Practice	M. houly
Jan	п	Program to find the sum and difference of two numbers using member function - program to display the number using constructor and destructor.  Program to display the employee details - program using object as pointer for displaying students results.	6	PPT & Lab Practice	M-kenthy'
Feb	ш	Program to add the two complex numbers - program to find student mark details using array within a class program to calculate the Standard Deviation - program to display the numbers using for loop	6	PPT & Lab Practice	M. harthji
March	IV	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-Program to find the sum and difference of two numbers using member function - program to display the number using constructor and destructor.	6	PPT & Lab Practice	M. harthy
April	V	Program to display the employee details - program using object as pointer for displaying students results.	6	PPT & Lab Practice	M. Karthij'

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
EM.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014

· visi 27



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

Sub. Code: 17SEM61

Title of the Paper: Discrete Mathematics

Total Hours: 30 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Introduction- TF statements - ConnectivesAtomic and compound statements-Well formed (statement) formulae - Truth table of a formula - Tautology- Tautological Implication and equivalence of formulae	6	Chalk & Talk	Ody
Jan	п	Lattices-Some Properties of Lattices-New Lattices Modular and Distributive Lattices - Boolean Algebra	6	Chalk & Talk	Al-j-i
Feb	ш	Recurrence –an introduction – Recurrence RelationWorked Examples.Introduction- TF statements - Connectives	6	Chalk & Talk	Alji
March	IV	Atomic and compound statements- Well formed (statement) formulae - Truth table of a formula -Tautology- Tautological Implication and equivalence of formulae Lattices-Some Properties of Lattices-New Lattices	6	Chalk & Talk	Alji
April	v	Modular and Distributive Lattices - Boolean Algebra	6	Chalk & Talk	Ali

Signature of the HOD

PRINCIPAL I/C
EM.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014



## DEPARTMENT OF MATHEMATICS III - B.SC MATHEMATICS LESSON PLAN

2022-2023

Sub. Code: 17SEM62

Title of the Paper: Combinatorics

Total Hours: 30 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Dec	I	The Rules of Sum and Product Permutations - Combinations - Permutations and Combinations with Repetitions	6	Chalk & Talk	R. Mu
Jan	п	The Binomial Theorem - Pascal's Identity - Vander Monde's Identity The Multinomial Theorem - Ramsey Number	6	Chalk & Talk	R- Mr_
Feb	ш	The Catalan Numbers - Stirling Numbers and Bell Numbers. The Rules of Sum and Product	6	Chalk & Talk	F. Mu
March	IV	Permutations - Combinations - Permutations and Combinations with Repetitions The Binomial Theorem - Pascal's Identity - Vander Monde's Identity	6	Chalk & Talk	R. Mu
April	v	The Multinomial Theorem - Ramsey Number	6	Chalk & Talk	f. M

Signature of the HOD

Signature of the Principal •
PRINCIPAL I/C
EM.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014



## III - B.SC MATHEMATICS LESSON PLAN

2022-2023

Sub. Code: 174VE6

Title of the Paper: Value Education

Total Hours: 30 Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocate d	Teaching Mode & Methods	Course Teacher Signature
Dec	I	Value education -need and important -objectives types of values-Nature and concept of moral education - value education as moral education Values of home-Role of women in decision making- Parental care-care for the aged family confliets and resolution.	6	Chalk & Talk	Q. Hemelle.
Jan	п	Character formation towards positive personality- Truthless, Sacrifice, sincerity, self confident-altrtuism, trolerame-confident honestly and courageIndian Religions- values in hindusim, Chirstianity, Buddhism, secularism and commutac, Harmony	6	Chalk & Talk	Q. Henre H.
Feb	ш	Human Rights-Fundamental Rights, Human Rights act 1993 (amended 2006)Consumer Production act 1986, Right to information act 2005 prodective laws for women – dowry prohibition act 1961.Domestic violence act2005 Value education –need and important –objectives types of values-Nature and concept of moral education – value education as moral education	6	Chalk & Talk	@ themath.
March	IV	Values of home-Role of women in decision making- Parental care-care for the aged family confliets and resolution. Character formation towards positive personality- Truthless, Sacrifice, sincerity, self confident-altruism, trolerame- confident honestly and courage	6	Chalk & Talk	Q. Humaka
April	v	Indian Religions- values in hindusim, Chirstianity, Buddhism, secularism and commutac, Harmony	6	Chalk & Talk	C. Hembe

Signature of the HOD

Signature of the Principal
PRINCIPAL I/C
EM.G. YADAVA WOMEN'S COLLEGE
MADURAI-625 014