### GOVERNMENT DEGREE COLLEGE (MEN)

ACCREDITED BY NAAC WITH B++ (CGPA 2.90)

Srikakulam - 532001, Andhra Pradesh, India

ph: 08942 222383 email: srikakulam.jkc@gmail.com website: https://www.gcmsklm.ac.in

#### **DEPARTMENT OF MATHEMATICS MINUTES OF THE MEETING (2021-22)**

Date: March 16, 2022

Minutes of the meeting held on March 16, 2022, for the certificate course involving the faculty of mathematics show that discussions primarily revolved around curriculum updates, faculty allocations, and strategies for student engagement. The meeting also considered the scheduling of exams and the need for additional resources in the department. An action plan was formulated, with responsible individuals assigned to address the discussed topics, and a follow-up meeting was scheduled for further coordination.

#### Agenda:

The meeting primarily focused on finalizing logistical details for the certificate course "Solution of Linear and Non-Linear Equations with Graphical Method," including class timings, location, and scheduling of the final examination.

#### **Resolution of the Course:**

After comprehensive deliberation, it was unanimously resolved to offer the certificate course "Solution of Linear and Non-Linear Equations with Graphical Method" to students during the upcoming academic term. The course is scheduled to commence on April 6, 2022, and conclude on June 15, 2022, with a duration of 30 days. The curriculum will encompass a detailed exploration of methods for solving both linear and non-linear equations utilizing graphical techniques. By combining theoretical knowledge with practical applications, the course aims to equip students with essential mathematical skills and problem-solving abilities. This resolution aims to provide students with a comprehensive understanding of mathematical concepts and enhance their proficiency in solving equations using graphical methods.

Signature of the Lecturer's

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From

R. Ravisankar, In charge Department of Mathematics, Govt. Degree College (Men), Srikakulam

To The principal, Govt. Degree College (Men), Srikakulam.

Subject: Request to Introduce Certificate Course for UG -mathematics Students.

Respected Madam,

The Department of Mathematics in its meeting held on March 16, 2022 at Department of Mathematics passed a resolution to request the introduction of a certificate course for students at Govt. Degree College (M)-Srikakulam. This course will provide valuable additional skills and opportunities, enhancing our students' academic and career prospects. Your consideration of this request is greatly appreciated.

Thanking you Madam,

Yours Sincerely,

Lecturer in charge
Dept. of Mathamatics
Govt. Degree College (Men)
SRIKAKULAM

#### <u>Circular</u>

We are excited to announce a new Certificate Course that will provide you with an opportunity to enhance your skills and knowledge in **Solution of the Linear and Non-Linear Equations with Graphical Method**. This course has been designed to help you gain valuable expertise in Mathematics and boost your career prospects.

#### **Course Details:**

**Course Name**: Solution of the Linear and Non-Linear Equation with Graphical Methods

**Course Duration:** 06-04-2022 to 15-06-2022 (30 days)

Timings: Every week classes will be held on Monday, Thurs day and Friday (except for the national holidays/festivals). Final examination will be conducted on 15/06/2022. (Friday). The class timings will be 4.30 - 5.30 hours IST (except for the day of the final examination).

Location: Room no :24

Course Fee: Nil

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Eligibility: Mathematics Final year Students only

Govt. Degree College (Men) SRIKAKULAM

#### **CERTIFICATE COURSE BROCHURE 2021-22**



#### GOVERNMENT DEGREE COLLEGE (MEN)

ACCREDITED BY NAAC WITH B++ (CGPA 2.90)

Srikakulam - 532001, Andhra Pradesh, India

ph: 08942 222383 e-mail: info@gdcmsklm.ac.in website: https://www.gdcmsklm.ac.in



Fee Structure: NIL

#### SOLUTIONS OF THE LIEAR & NON-LINEAR EQUATIONS WITH GRAPHICAL METHODS

#### Offered by

Department of Mathematics, Govt. Degree College (Men), Srikakulam

**About the Course:** Graph a system of two linear equations. Graph a system of two linear inequalities. Evaluate ordered pairsas solutions to systems. Determine whether an ordered pair is a solution to a system of linear equations. Determine whether an ordered pair is a solution to a system of linear inequalities. Classify solutions to systems. Identify what type of solution a systemwill have based on its graph. The instructor ensures to cover the concepts in depth along with numerous examples to showcase the usage and solution of linear and nonlinear inequality.

Number of Credits: Nil Mode of Teaching: Offline

**Course Contents:** 1. Introduction to algebra, Linear equations, Functions, System of Linear Equations an Inequalities and Exponential and Logarithmic Functions.2. Graphing of Linear Equation in Two Variables with some examples.

3. Graphing of linear inequalities with examples.4. Trigonometry identities with graphs 5. Linear models with graphs, Quadratic models, Exponential growth and decay models.

References: 1. Linear and Nonlinear Systems of Equations by Alex Joujan.

2. Elementary Equations by L.Marecek & M.A.A.Smit.

**Eligibility Criteria: Graduates.** 

#### **Important Dates**

• Registration start date: 21/03/2022.

• Last date for registration: 04/04/2022.

• Commencement of classes: 06/04/2022.

• Date of final examination: 15/06/2022.

#### **Paper Code : GCMMAT03**

**Admission Procedure:** Interested participants can complete the registration process through the following *registration* forms forthe above course is available at the department of Mathematics.

Admission process for this course is on first-come-first- serve basis and the last date for registration to the courses 30/07/2021 (Friday). Class Duration: Classes will be held for 10 weeks starting from 06/04/2022 (Wednesday). Every week classes will be held onMonday, Wednesday, and Friday (except for the national holidays/festivals). Final examination will be conducted on 15/06/2022 (Friday). The class timings will be 4.30 – 5.30 hours IST (except for the day of the final examination).

**Assessment:** Assessment will be based on completion of assignments and performance in the test conducted at the end of thecourse. The participant must obtain at least 50% in the test to avail the course completion certificate.

#### **General Instructions**

1. Admission to the course can be obtained only through the offline mode. Personal requests to Admission Section or to the Department of Mathematics will not be considered.

For internal and external candidates, admission will be confirmed only after the scrutiny of the application.

- 3.A minimum of 75% attendance is compulsory to take the examination. Attendance will be reviewed and notified.4.Batch change will not be permitted: Participants enrolled to a batch have to complete the course in thesame batch.
  - 5. Those who are not able to clear the final examination we will not given certificate. A candidate has to clear the examination within three attempts.

**Course Coordinator** 

Mr. R.Ravisankar, Lecturer in Charge, Department of Mathematics. +91 9010161319, +91 9346666844.

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#### CERTIFICATE COURSE SYLLABUS

# Solutions of Linear & Non-linear Equations with Graphical Methods

#### **Course Description:**

This course explores the graphical methods for solving both linear and non-linear equations, providing participants with the tools to visually interpret and analyse solutions. Linear and non-linear equations arise in various disciplines, including mathematics, physics, engineering, and economics. Through graphical techniques, participants will learn to plot equations, identify solution points, and interpret the behaviour of functions graphically. The course will cover both analytical and numerical approaches, emphasizing the visual representation of solutions.

#### **Course Objectives:**

- 1. Understand the principles of graphing linear and non-linear equations.
- 2. Learn various graphical techniques for solving equations.
- 3. Apply graphical methods to solve single-variable and multivariable equations.
- 4. Interpret graphical representations of equations and their solutions.
- 5. Explore real-world applications of graphical equation solving.

#### **Course Topics:**

- 1. Introduction to Graphical Equation Solving. Overview of graphical methods for equation solving. Importance of graphical perspective in understanding solutions.
- 2. Graphical Solutions of Linear Equations. Solving linear equations graphically. Graphical interpretation of systems of linear equations.
- 3. Graphical Solutions of Non-linear Equations. Graphical methods for solving quadratic, cubic, and higher-order equations. Using graphs to find approximate solutions.
- 4. Advanced Graphical Techniques. Graphical analysis of inequalities Visualizing optimization problems. Utilizing software tools for graphical equation solving.
- 5. Applications of Graphical Equation Solving. Physics: Kinematics and dynamics. Economics: Supply and demand analysis. Engineering: Circuit analysis and optimization. Biology: Population modelling.

#### **References:**

- 1. "Graphical Methods for Data Analysis" by John L. Phillips, John L. Gainer, and Alberto Sangiovanni-Vincentelli.
- 2. "Visual Complex Analysis" by Tristan Needham.
- 3. "Introduction to Graph Theory" by Richard J. Trudeau.

#### **Solutions of Linear & Non-linear Equations with Graphical Methods**

#### **Activity Brief Note:**

The Solutions of Linear & Non-linear Equations with Graphical Methods activity aims to provide participants with practical experience in solving equations using graphical techniques. Through this activity, participants will engage in hands-on exercises to plot both linear and non-linear equations, identify solution points, and interpret graphical representations of equations. By the end of the activity, participants will enhance their problem-solving skills and gain a deeper understanding of how to utilize graphical methods for equation analysis.

#### Aims:

- 1. To introduce participants to graphical methods for solving linear and non-linear equations.
- 2. To provide participants with practical experience in plotting equations and identifying solution points graphically.
- 3. To deepen participants' understanding of the relationship between graphical representations and equation solutions.

#### **Objectives:**

- 1. Participants will learn how to plot linear and non-linear equations on a coordinate plane.
- 2. Participants will practice identifying solution points and interpreting graphical representations of equations.
- 3. Participants will apply graphical techniques to solve single-variable and multivariable equations.
- 4. Participants will explore the behavior of linear and non-linear functions graphically.

#### **Procedure:**

- <u>1.Introduction (10 minutes):</u> Brief overview of the importance of graphical methods in solving linear and non-linear equations. Explanation of the activity objectives and expected outcomes.
- <u>2.Theoretical Background (15 minutes):</u> Review of key concepts in graphing linear and non-linear equations. Explanation of plotting techniques and interpretation of graphs.
- <u>3.Hands-on Activity (45 minutes):</u> Participants will be provided with equations (both linear and non-linear) and graph paper. They will plot the equations on the graph paper and identify solution points. Participants will analyse the graphs to determine characteristics such as intercepts, slopes, and behaviors near solutions.
- <u>4.Discussion and Analysis (20 minutes):</u> Participants will discuss their findings and interpretations with the instructor and peers. Key observations and insights will be highlighted, addressing any misconceptions or challenges encountered during the activity.

5. <u>Conclusion and Reflection (10 minutes)</u>: Recapitulation of the main concepts learned during the activity. Participants will reflect on the relevance of graphical equation solving in real-world contexts and its implications for problem-solving.

#### **Outcomes:**

- 1. Enhanced understanding of graphical methods for solving linear and non-linear equations.
- 2. Improved problem-solving skills through hands-on experience.
- 3. Increased ability to interpret graphical representations of equations and identify solution points.
- 4. Application of graphical techniques to analyze and solve real-world problems involving linear and non-linear equations.
- 5. Development of critical thinking and analytical skills in equation solving using graphical methods.

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### **MODEL PAPER FOR CERTIFICATE COURSE 2021-22**

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### **ASSIGNMENT OF CERTIFICATE COURSE**

#### 2021-22

### (Solution of the Linear & Non-Linear Equations with Graphical Method)

#### MAX. MARKS: 20

- 1. Explain Graphical Methods for inequalities?
- 2. Draw the Graph of y = logx?
- 3. Draw the graph of  $y = e^{2x}$ ?
- 4. Draw the Graph of y = Sinx?
- 5. Draw the combined Graph of y = x and  $y = x^{1/2}$ ?

#### **QUESTION PAPER OF CERTIFICATE COURSE**

# GOVT.DEGREE COLLEGE (MEN)-SRIKAKULAM CERTIFICATE COURSE EXAM PAPER

(Solution of the Linear & Non-Linear Equations with Graphical Method)

MAX.MARKS:50

TIME: 2Hrs

**Note:** Answer any five of the following Questions

5x10=50marks

- 1. Explain Linear & Non-Linear Equations?
- 2. Draw the Graph of  $y = x^2 + 4x 3$ ?
- 3. Find the common points of  $y = x^2$  and  $y = \sqrt{x}$ ?
- 4. Definition of quadratic equations and explain it?
- 5. Draw the graph of Integral Part of x?
- 6. Draw the graph of  $y = e^{-x}$ ?
- 7. Draw the Graph of y = seex?
- 8. Explain Graphical methods?



### Government Degree College (M), Srikakulam **Feedback**



Name of the event	CERTIFICATE COURSE
Department	Mathematics
Date	15-06-2022
Name of student	B. MANOJ
Class	MPCS
Mobile no.	-

1.	Did the even	t fulfil	its	objectives'	?
----	--------------	----------	-----	-------------	---

✓ Yes/No

2. How useful was the event for you? (0 being Not useful and 5 Most useful)

0	1	2	3	4 ~	5

3. Rate the overall success of the event (0 being Not useful and 5 Most useful)

0	1	2	3	4	5
4. Lis	t the key takeav	way points from	n the events.		

5. Suggestions if any: -  $\bigvee \bigcup$ 

**Signature of the Student** 



## Government Degree College (M), Srikakulam Feedback



Name of the event	CERTIFICATE COURSE	
Department	Mathematics	
Date	15-06-2022	
Name of student	K.SRIKANTH	
Class	MPCS	
Mobile no.	8919326541	

1.	Did the event fulfil its objectives?

✓ Yes/No

2. How useful was the event for you? (0 being Not useful and 5 Most useful)

0	1	2	2	1	5 \ /
U	1	2	3	4	$\supset$

3. Rate the overall success of the event (0 being Not useful and 5 Most useful)

0	1	2	3	4	5

4. List the key takeaway points from the events.

5. Suggestions if any \_ N \ \_ \_

Signature of the Student



# Government Degree College (M), Srikakulam Feedback



Name of the event	CERTIFICATE COURSE	
Department	Mathematics	
Date	15-06-2022	
Name of student	L.HIMABINDHU	
Class	MECS	
Mobile no.	9010111213	

1.	Did the event	fulfil it's	objectives?
••	Did the event	I COLLIE TO D	Cojecti Co.

✓ Yes/No

2. How useful was the event for you? (0 being Not useful and 5 Most useful)

0	1	2	3	4	5
3. Rate the overall success of the event (0 being Not useful and 5 Most useful)					
0	1	2	3	4	5

4. List the key takeaway points from the events.

5. Suggestions if any \_ \( \)

Signature of the Student



# Government Degree College (M), Srikakulam



### **Consolidated Feedback**

Total no. of Participants = 60

No. of participants from whom feedback is collected = 60

S.No		No. of participants graded "Yes"		No. of participants graded "No"		
1	Did the event fulfil its objectives	60		0		
2		No. of participants graded - 1	No. of participants graded – 2	No. of participants graded - 3	No. of participants graded - 4	No. of participants graded - 5
3	How useful was the event for you	0	0	0	14	46
4	Rate the overall success of the event	-	-	-	23%	77 %
5 key takeaway points from the event		Graphing Systems of Equations, Inequalities, Applications, Graphing Tools, Problem-Solving Skills, Critical Thinking, Accuracy and Precision, Visualization Skills etc.				
6	Suggestions if any		s might introduce visualize linear eq		_	tools that

Coordinator

Lecturer in charge
Dept. of Mathamatics
Govt. Degree College (Men)
SRIKAKULAM

### **CERTIFICATE ISSUE DETAILS**

Certificate Issue Register 2021-22 2021-22 Name of the student Care					
2021-	-22		~ 27		
No Name of the student	Group	Grade	signature		
s. pavanchandu	Mecs	A	5. pavandhand4.		
A-Anantu	MECS		A. Anantu		
3 A-Hitesh reddy	MECS	B	- Hill Capadag		
B. Mohanyao	Mecs	A	B. Mohan prac		
5 D. Yamuna	Mecs	A	B. Hoper famina.		
G. Jayashree	MECS	P	C. Janasii		
L-Chindu	MECS	В	G. Jayacij h dindu.		
2 L. Himabindhu	MECS		he offmatonde.		
L. Krishna Rao	MECS	B+	L. Kouthna rae		
0 M. Srinu	MECS	B	M. Leine		
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2 P. Leela	MECS	MA	p. loda		
3 P. Srinu	MECS	B+	D. Frina		
P. Tyothe kumar	Mecs	100B NO	D. Idothi Kumas		
5 S. Sanjay kumar	MECS	A	P. Idothi Kumary S. Surkahn		
6 S- Jashna Rani	MECS	A	3. Joshna Rani		
T- Priyanka	Mecs	nt	T. priyanter		
8 T- Srinivas	Mecs	DA	T. Sovinivas		
9 To Madhavi	MECS	DAI OF	T. Madhavi		
20 B. ESWAYA YAO	MCTC	A	B. Eswararao		
21 Ch- Bhaskara rao	MPC	A	CH Bhaskana Ran		
22 A. Syinivasa yao	MPC	AM A	D. Srinivasarao		
23 E. Acleep	MPC	B	e. Dilup		
24 G- SÉVOL	MPC	B	6 5 Va		
5 S. Kofeswara rao	MPC	AT	S. kotes woon vao		
6 S. Lakshmana	MPC	AM	S. Kakshmana		
7 U.Naveen	MPC	AM TYP	U. Naveen		
28 p-paju	MPCS -	- FI	THE WAY OF THE		
9 AchinnaBabu	MPCS	AIL	A. Chinna berbu.		
	MPCS	B	B. Rasu		
B Brawasor Basu	MPCS	Bhala	B. Jantarbaber		

No	Name of the student	Group	Grade	Signature
32	B-Manoj	MPCS	A	B. Manos
33	Ch. Divakara ra o	MIPCS	A	Ch. Divakarao
24	D. Yashwanth	MPCS	A	D. yaswanut
55	p- Vinay	MPCS	A	D. Virgy M
36	D. Durga 11 1	MPCS	B	D. Durga
37	D- Ramyasri	MPCS	A	D. Ramyo soft
38	G. parathi	MPCS	B	G. porvata
39	Go knishna murthy	MPCS	B	G. Krishna murky
10	D-Mohanrao	MPCS	A	8. Mohamas.
11	J. Berara	MPCS	В	J. Belona
12	K- Ramesa Aumar	MPCS	B	K. Rometh Kumin
43	k. Stikanta	MPCS	A	K. Srikanth.
44	C. Ramya	MPCS	A	L. Ramya
45	L. Saisvingaprasad	MPCS	A	L. saidurga pragad
16	M. Yamuna	MPCS	MA	M. yonuna
47	N. PRadhan	MACS	INA	N. Rosedhon
18	P. Manoj'	MPCS	A	P. mano
		MPCS	A+	7 Amitha
50		MPCS	В	R. Amarannaidu
51	S-Harathi	mpes	PI	S. Hazarle
		MIPCS	O	3 Scatter Decen
		MPCS	STAT	T. Benupradhan
69		MPCS	A	T. Tagose
		MPCS	A	T. Soavan bumar.
57	t. Gayatri V 8	MPCS	B	V Gayatri
51	T. Mohini kumari	MPCS	AT	To Mohrin
50	v. Lavanya kumari	MPCS	B	O. Carryen Kunayi
60	Victoria de Maria	MPCS	A	U polivani
60	V. Deepika	1PCS	O	V. Depiha

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	Lecturer in charge Dept. of Mathamatics
	Govt. Degree College (Men)
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### CERTIFICATE

This is to certify that S. PAVAN CHANDHU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that A.ANANTHU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade

R. RSo

R. Ravi Sankar

**Course Coordinator** 

(SK)

Dr. P. Surekha



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of College Parking Par

### CERTIFICATE

This is to certify that A.HITESH REDDY

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade

R. RSo

R. Ravi Sankar

**Course Coordinator** 

BK

Dr. P. Surekha





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### CERTIFICATE

This is to certify that B. MOHAN RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. RS

R. Ravi Sankar

**Course Coordinator** 

(3K)

Dr. P. Surekha



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## CERTIFICATE

This is to certify that D. YUMUNA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

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#### **G.JAYASHREE**

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

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#### L.CHINDU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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R. Ravi Sankar

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### CERTIFICATE

This is to certify that

### L.KRISHNA RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B+" grade.

R. Ros

R. Ravi Sankar

**Course Coordinator** 

Dr. D. Surakha

Dr. P. Surekha





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### CERTIFICATE

This is to certify that M.SRINU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B" grade

R. Ravi Sankar

Dr. P. Surekha

N. POE

**Course Coordinator** 



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### CERTIFICATE

This is to certify that

#### P.LILAVATHI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

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R. Ravi Sankar

**Course Coordinator** 

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To a Andrew Park

### CERTIFICATE

This is to certify that P.JYOTHI KUMARI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that

### S. SANJAY KUMAR

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)



### CERTIFICATE

This is to certify that OSHNA RANI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

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### CERTIFICATE

This is to certify that T.PRIYANKA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A+" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha







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### CERTIFICATE

This is to certify that T.SRINIVAS

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that T. MADHAVI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)

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### CERTIFICATE

This is to certify that **B.ESWARA RAO** 

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

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### CERTIFICATE

This is to certify that CH. BHASKARA RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that D.SRINIVASA RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that E.DILEEP

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)

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### CERTIFICATE

This is to certify that

G.SIVA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that S.KOTESWARA RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A+" grade.

R. Ros

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha









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### CERTIFICATE

This is to certify that S.LAKSHMANA RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that U.NAVEEN

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

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Dr. P. Surekha



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### CERTIFICATE

This is to certify that

### A.CHINNA BABU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Shankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that **B.RAJU** 

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Shankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that B. JOWOHAR BABU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods"conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that **B.MANOJ** 

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

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Dr. P. Surekha





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College of Andro Print

### CERTIFICATE

This is to certify that CH.DIVAKARA RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Shankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that D. YASHWANTH

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)

Total of Andrew Park

### CERTIFICATE

This is to certify that D. VINAY

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that **D.DURGA** 

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that D.RAMYA SRI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that G.PARAVATHI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that G.KRISHNA MURTHY

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that I.MOHAN RAO

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that J.BEHERA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)



### CERTIFICATE

This is to certify that

#### K.RAMESH KUMAR

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

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Total of Andrea Professional

### CERTIFICATE

This is to certify that

K.SRIKANTH

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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Total of Andrea Professional

### CERTIFICATE

This is to certify that

#### L.RAMYA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)

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### CERTIFICATE

This is to certify that L.SAIDURGAPRASAD

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that M. YAMUNA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that N.PRADHAN

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha







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Reaccredited by NAAC With B<sup>++</sup> (2.90 CGPA)

### CERTIFICATE

This is to certify that **P.MANOJ** 

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade

K. Roo

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that

P.ANITHA

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A+" grade.

R. Ros

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R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha







(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

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### CERTIFICATE

This is to certify that R.AMMANNAIDU

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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of College

### CERTIFICATE

This is to certify that **S. HARATHI** 

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that

#### S. SEETHA LAKSHMI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "O" grade.

R. Ravi Shankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that T.TAGORE

has successfully completed Certificate Course "Solutions of the Linear & Nonlinear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and Secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that T. SRAVAN KUMAR

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that T. GAYATRI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "B" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha





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### CERTIFICATE

This is to certify that

#### T. MOHINI KUMARI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A+" grade.

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R. Ravi Sankar

**Course Coordinator** 

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Dr. P. Surekha
Principal



(Affiliated to Dr. B. R. Ambedkar University, Srikakulam, Andhra Pradesh)

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### CERTIFICATE

This is to certify that

#### U. LAVANYA KUMARI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A+" grade.

R. Ros

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that U. PAVANI

has successfully completed Certificate Course in "Solutions of the Linear & Non-linear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "A" grade.

R. Ravi Sankar

**Course Coordinator** 

Dr. P. Surekha



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### CERTIFICATE

This is to certify that V.DEEPIKA

has successfully completed Certificate Course "Solutions of the Linear & Nonlinear Equations with Graphical Methods" conducted by Department of Mathematics Govt. Degree College (Men), Srikakulam, A.P. during from April to June - 2022 and secured with "O" grade.

R. Ravi Shankar

**Course Coordinator** 

Dr. P. Surekha

