# GOVERNMENT DEGREE COLLEGE MUMMIDIVARAM – 533 216

**Dr.B.R.AMBEDKAR KONASEEMA DISTRICT,**
ANDHRA PRADESH

# Guest Lecture

**on**

# "Applications of Differential Equations in Various Fields"

**Resource Person**

**S.Lt Dr.D.CH.Paparao,**
**H.O.D, Department of Mathematics,**
**V.K.V.Govt Degree College, Kothapeta.**

**Date : 30 -09-2024**

## Organized By

**Department of Mathematics,**
**Govt. Degree College, Mummidivaram**
**Dr.B.R.Ambedkar Konaseema District**

# INDEX

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

**Date : 23-09-2024**

The Department of Mathematics is resolved to conduct a Guest Lecture on "**Applications of Mathematics in Various Fields**" on 30-09-2024 at 10 AM for all the mathematics students in the Seminar Hall (Room No.5).

**Guest Lecture Topic : Applications of Mathematics in Various Fields**

| | |
|---|---|
| **Resource Peron** | **: S. Lt. Dr. D. CH. Paparao, Senior Lecturer, H. O. D. Of Mathematics, V. K. V. GDC, Kothapeta** |
| **Date** | **: 30-09-2024** |
| **Time** | **: 10 AM** |
| **Venue** | **: Seminar Hall (Room No.5)** |

**The objectives of the Guest Lecture:**

1. To help students in latest concepts, practices, trends etc in Mathematics
2. To facilitate effective achievement of certain course outcomes
3. To enhance subject knowledge for students.
4. To suggest suitable measures for academicians.
5. To gain specialized knowledge, diverse perspectives, and connections that can significantly improve their educational journey and future career prospects

Signature of the Lecturer in charge

K.CHITTIBABU
M.Sc, CSIR-JRF, NET
Lecturer in Incharge
Department of Mathematics
Govt. Degree College
MUMMIDIVARAM - 533216
Dr.B.R.Ambedkar Konaseema Dist, A.P.

Signature of the Principal

PRINCIPAL
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dr.B.R. Ambedkar Konaseema Dt. A.P

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

**Date: 25-09-2024**

From,
K. Chittibabu, M.Sc., CSIR-JRF., NET.,
Lecturer in charge,
Department of Mathematics,
Mummidivaram-533216
Dr.B.R.Ambedkar Konaseema District.

To
The Principal,
Govt Degree College,
Mummidivaram-533216,
Dr.B.R.Ambedkar Konaseema District

Sir,

**SUB: Sri K.Chittibabu, Lecturer-in-charge, Department of Mathematics, Govt. Degree College, Mummidivaram-Request you to give permission to organize a Guest lecture on "Applications of Differential Equations in Various fields" on 30-09-2024- Req- Regarding.**

@@@

I wish to submit the Department of Mathematics is going to conduct an Extension Lecture on" **Applications of Differential Equations in Various fields"** on 30-09-2024 at 10 AM. In this connection I would like to invite Dr.D.CH.Paparao, Senior Lecturer, Department of Mathematics, V.K.V.Degree College, Kothapeta as resource person. Hence, I request you sir kindly give me permission to organize a Guest lecture on 30-09-2024.For this I ever thankful to you sir.

Thanking you Sir,

Yours Faithfully,

[K CHITTIBABU]
Lecturer in charge,
Department of Mathematics
Mummidivaram

Station : Mummidivaram
Date : 25-09-2024

Estb: 2021
Mail: gdcmummidivaram.jkc@gmail.com

Office : 088562 93784
Principal: 9866668182

**GOVERNMENT DEGREE COLLEGE,**
**MUMMIDIVARAM**
**Dr.B.R. AMBEDKAR KONASEEMA**
**DISTRICT- 533216**

**Dr.S.PRABHAKAR M.A., Ph.D**
**Principal**

**Mummidivaram,**
**Dt: 26-09-2024**

To
The Principal,
V.K.V.Govt. Degree College,
Kothapeta.

Sir

**Sub: - Request to depute Dr.D.CH.Paparao, Senior Lecturer, Department of Mathematics to deliver extension lecture on 30-09-2024 in Connection with extension activity -Req-Reg.**

Ref: - Request letter received from the Department of Mathematics of Our College Dated on 25-09-2024.

@@@

I Wish to submit that as per the reference cited above the Department of Mathematics of our college is going to conduct an Extension Lecture on 30-09-2024. So, I request you to depute **Dr.D.CH.Paparao, Senior Lecturer, Department of Mathematics**, to deliver extension lecture on **"Applications of Differential Equations in Various Fields"** on 30.09.2024 at 10 AM. Hence kindly permit him to attend the extension lecture for which I shall ever be thankful to you.

Thanking you,

**Yours faithfully,**

PRINCIPAL 26.9.24
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dr.B.R. Ambedkar Konaseema Dt. A.P

26/9/24

Copy to Dr.D.CH.Paparao,
Senior Lecturer,
Department of Mathematics,
V.K.V.Govt Degree College,
Kothapeta.

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

**Date: 27-09-2024**

### ACCEPTANCE LETTER

**DATE: 27.09.2024**
**PLACE: KOTHAPETA**

**FROM:**
Dr.D.CH.PAPARAO
HOD OF MATHEMATICS
V.K.V.GOVT.DEGREE COLLEGE, KOTHAPETA

**TO**
THE PRINCIPAL
GOVT.DEGREE COLLEGE,
MUMMIDIVARAM

**Respect Sir,**

**SUB: "Acceptance of your Invitation to deliver a guest lecture"-regarding**

I am pleased to accept your invitation to deliver a guest lecture on "Applications of Differential Equations in various fields "at Government Degree College, MUMMIDIVARAM on 30.09.2024 at 10.30am.It is an honour to be considered for this opportunity, and I am excited to share my insights and experiences with your students. Looking forward to a productive session with your bright students.

Best regards,

(Dr.D.CH.PAPARAO) 27/09/2024

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District -533216

## DEPARTMENT OF MATHEMATICS

**Date : 28-09-2024**

## NOTICE

It is here by informed to all the III B.Sc( M.P.Cs), I B.Sc Chemistry honors and Computer Science honors students of **that the Department of Mathematics** is going to conduct a Guest Lecture on "**Applications of Mathematics in Various Fields**" on 30-09-2024 at 10 AM. Hence all the students are instructed to attend the above said Programme without fail.

**Guest Lecture Topic : Applications of Mathematics in Various Fields**

| | |
|---|---|
| **Resource Peron** | **: S. Lt. Dr. D. CH. Paparao, Senior Lecturer, H. O. D. Of Mathematics, V. K. V. GDC, Kothapeta** |
| **Date** | **: 30-09-2024** |
| **Time** | **: 10 AM** |
| **Venue** | **: Seminar Hall (Room No.5)** |

Signature of the Lecturer in charge

K.CHITTIBABU
M.Sc, CSIR-JRF, NET
Lecturer in Incharge
Department of Mathematics
Govt. Degree College
MUMMIDIVARAM - 533216
Dr.B.R.Ambedkar Konaseema Dist, A.P.

Signature of the Principal

PRINCIPAL
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dr.B.R. Ambedkar Konaseema Dt. A.P

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
## Dr.B.R.Ambedkar
## Konaseema District- 533216

## DEPARTMENT OF MATHEMATICS

**Date:28-09-2024**

| S.No | Name of the student | Class | Group | Roll No | Signature of the student |
|---|---|---|---|---|---|
| 1. | D. Mahalakshmi | III BSC | MPCs | 04 | D. Maha Lakshmi |
| 2. | Ch. Navya | III BSc | MPCs | 03 | Ch. Navya |
| 3. | K. Kushi Deepika | III rd BSc | MPCs | 07 | K. Kushi deepika |
| 4 | U. Anitha | III rd BSc | MPC's | 17 | U. Anitha |
| 5. | ch. Vijaya Sri lakshmi | III rd BSc | MPC's | 02 | ch. Vijaya Sri lakshmi |
| 6 | S. Durga lakshmi | III rd BSc | MPC's | 15 | S. Durga lakshmi. |
| 7. | P. Bhumya | III rd BSc | MPC's | 13 | P. Bhumya |
| 8. | P. Sravanthi | III rd BSc | MPC's | 12 | P. Sravanthi |
| 9. | L. Prameela. | III rd BSc | MPC's | 09 | L. Prameela |
| 10. | K. Haritha | III rd B.S.C | MPCS | 06 | K. Haritha |
| 11. | V. Vannu prasanna | III rd B.SC | MPCs | 18 | V. Vannu prasanna |
| 12. | G. Manika | III rd Bsc | mpcs | 05 | G. Manika |
| 13 | J.V.S.S. Surekha | I st BSc | Computers | 01 | J. V. S. S. Surekha |
| 14. | K. Pavani lakshmi Durga | 1 st BSc | computers | 03 | K. Pavani |
| 15 | Balasadi Bhargavi Lakshmi | I BSc | chemistry | 02 | B. B. Lakshmi |

| | | | | | |
|---|---|---|---|---|---|
| 16 | V.Mounika | I BSc | computers | 07 | V.Mounika |
| 17. | Kopparthi Sai ganga pravallika | I BSc | Chemistry | 06 | K.Sai Ganga Pravallika |
| 18. | Gubbala Bhavana Vijaya sree | I BSc | chemistry | 05 | G.Bhavana Vijaya sree |
| 19. | G.Divya | I BSc | Compulsory | 01 | G.Divya |
| 20. | M.Satya sri | I BSc | chemistry | 09 | M.Satyasri |
| 21 | P Bhanuprakash | I-BSc | Compulsory | 05 | P Bhanuprakash |
| 22 | Pandu venkata Naveen | I.BSc | chemistry | 08 | P.V.Naveen |
| 23 | Mavuri Chaitanya Subrahmanyam Prasad | I-BSc | chemistry | 10 | M.Ch.S.Prasad |
| 24, | Guttala prasanth kumar | I BSc | chemistry | 11 | G.P.kumar |
| 25. | G.yogendhra | I BSc | chemistry | 04 | G.yogendhra |
| 26. | B.murali Ramkumar | I BSc | chemistry | 03 | B.murali Ramkumar |
| 27 | D.Naga Sanjay | I B.Sc | chemistry | 12 | D.N.Sanjay |

Signature of the Principal

PRINCIPAL
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dr.B.R. Ambedkar Konaseema Dt. A.P

Signature of the Lecturer in charge

K.CHITTIBABU
M.Sc, CSIR-JRF, NET
Lecturer in Incharge
Department of Mathematics
Govt. Degree College
MUMMIDIVARAM - 533216
Dr.B.R.Ambedkar Konaseema Dist, A.P,

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

Date:30-09-2024

### PROGRAMME SHEET

| | |
|---|---|
| Inviting Guests to the dais | : Sri D.Pallamraju, Lecturer in Chemistry |
| 1.Prayer | : 1) Kumari D.Mahalakshmi, III B.Sc (M.P.Cs) |
| | 2) Kumari T.Sowjanya, III B.Sc (M.P.Cs) |
| 2. Principal's Opening Remarks | : Dr.S.Prabhakar, Principal |
| 3. Introduction of the Resource Person | : Dr.G.Sujatha, Lecturer in English |
| 4. Guest Lecture by Resource Person | : S.Lt Dr.D.CH.Paparao, H.O.D, Department of Mathematics, V.K.V.GDC, Kothapeta. |
| 5. Feedback by Students | : 1) Kumari L.Prameela, III B.Sc (M.P.Cs) |
| 6. Felicitation to the Resource Person | : Principal, Staff & Students |
| 7. Vote of Thanks | : Sri K.Chittibabu, Lecturer in Mathematics |
| 8. National Anthem | : By All the Participants |

20/09/24

Signature of the Lecturer in charge

K.CHITTIBABU
M.Sc, CSIR-JRF, NET
Lecturer In Incharge
Department of Mathematics
Govt. Degree College
MUMMIDIVARAM - 533216
Dr.B.R.Ambedkar Konaseema Dist, A.P.

30.9.24

Signature of the Principal

PRINCIPAL
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dr.B.R. Ambedkar Konaseema Dt. A.P.

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

**Date: 30-09-2024**

## TOPIC SYNOPSIS

**Differential Equation applications have significance in both academic and real life. An equation denotes the relation between two quantity or two functions or two variables or set of variables. Differential equation denotes the relationship between a function and its derivatives, with some set of formulas. There are many examples, which signifies the use of these equations.**

**The functions are the one which denotes some sort of operation performed and the rate of change during the performance is the derivative of that operation, and the relation between them is the differential equation. These equations are represented in the form of order of the degree, such as first order, second order, etc. Its applications are common to find in the field of engineering, physics etc.**

## Differential Equations

**In terms of mathematics, we say that the differential equation is the relationship that involves the derivative of a function or a dependent variable with respect to an independent variable. It is represented as;**

$$\frac{d(y)}{d(x)} = f(x) = y^1 \quad OR \quad \frac{d(y)}{d(x)} = f(x,y) = y^1$$

**Where, x is independent and y is dependent variable.**

**Equation** $f(x,y,c) = 0$. **Example:** $2x + 3y + 5 = 0$

**Differential equation of $1^{st}$ order $\Rightarrow F(x, y, y^1) = 0$**

**Example:** $\frac{dy}{dx} = x + y$

**Differential equation of $2^{nd}$ order $\Rightarrow F(x, y, y^1, y^{11}) = 0$.**

**Example:** $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + 3y = 4x^3$

**Differential equation of $3^{rd}$ order $\Rightarrow F(x, y, y^1, y^{11}, \ldots., y^n) = 0$**

**Example:** $\frac{d^3y}{dx^3} + 3\frac{d^2y}{dx^2} + 5\frac{dy}{dx} + 2y = e^x$

**Differential equation of $n^{th}$ order $\Rightarrow F(x, y, y^1, y^{11}, \ldots., y^n) = 0$**

$$\Rightarrow \frac{d^ny}{dx^n} + p_1\frac{d^{n-1}y}{dx^{n-1}} + p_2\frac{d^{n-2}y}{dx^{n-2}} + p_3\frac{d^{n-3}y}{dx^{n-3}} + \cdots\cdots\cdots\cdots + p_ny = \sin x$$

## Ordinary Differential Equation(ODE)

**Ordinary differential equation involves a relation between one real variable which is independent say x and one dependent variable say y.**

***Example:*** $\frac{dy}{dx} = x^3, \; y = f(x)$

## Partial Differential Equation(PDE)

**In the partial differential equation, unlike ordinary differential equation, there is more than one independent variable.**

**Example:** $\frac{\partial z}{\partial x} + \frac{\partial z}{\partial y} = 2z \qquad z = f(x, y)$

# REAL LIFE APPLICATIONS

**Differential equations are incredibly versatile and have numerous real-life applications across various**

**fields. Here are some examples that degree college students might find interesting:**

1. **Weather Forecasting: Differential equations are used to model and predict weather patterns by analyzing changes in atmospheric conditions over time**
2. **Population Dynamics: They help in understanding how populations of species grow and interact with each other, which is crucial for ecology and conservation efforts.**
3. **Engineering: In mechanical and electrical engineering, differential equations are us ed to design and analyze systems like circuits, engines, and control systems.**
4. **Economics: They are used to model economic growth, predict market trends, and understand the dynamics of supply and demand.**
5. **Medicine and Healthcare: Differential equations help model the spread of diseases, the dynamics of drug delivery, and the behavior of biological systems.**
6. **Environmental Science: They are used to study pollution dispersion, the impact of human activities on ecosystems, and climate change models.**
7. **Physics: In classical mechanics, thermodynamics, and quantum mechanics, differen tial equations describe how physical systems evolve over time.**
8. **Biology: They model the growth rates of bacteria, the spread of diseases, and the dynamics of ecosystems.**
9. **Finance: Differential equations are used to model stock prices, interest rates, and financial derivatives.**

**Exponential growth can be modelled by differential equations and has many real-life applications. Here are some examples:**

## 1. Population Growth

- **Model: ,** $\frac{dP}{dt} = kP$**, where P(t) is the population at time t, and k is the growth rate.**
- **Explanation: In ideal conditions (e.g., unlimited resources), population grows proportionally to its current size, leading to exponential growth.**
- **Real-life example: Bacteria multiplying in a petri dish or human population growth (in the absence of resource limitations).**

## 2. Radioactive Decay

- **Model:** $\frac{dN}{dt} = \lambda P$ **, where N(t) is the quantity of the radioactive substance, and λ is the decay constant.**
- **Explanation: The number of radioactive atoms decays at a rate proportional to the current number of atoms, leading to exponential decay.**
- **Real-life example: The decay of uranium-238 or carbon-14 in radiometric dating.**

## 3. Interest Growth in Finance (Compound Interest)

- **Model:** $\frac{dA}{dt} = rA$**, where A(t) is the amount of money at time t, and r is the interest rate.**
- **Explanation: Money in an interest-bearing account grows exponentially, as the interest earned is proportional to the current balance.**
- **Real-life example: Savings accounts, investment portfolios with continuously compounding interest.**

## 4. Spread of Diseases (Epidemic Models)

- **Model:** $\frac{dI}{dt} = \beta I$ **, where I(t) is the number of infected individuals, and β is the transmission rate.**
- **Explanation: In the early stages of an epidemic, the number of infected individuals can grow exponentially if there are no interventions like vaccination.**
- **Real-life example: The initial phase of COVID-19 spread, where each infected individual can infect multiple others.**

## 5. Newton's Law of Cooling

- **Model:** $\frac{dP}{dt} = -k(T - T_{env})$**, where T(t) is the temperature of an object,** $T_{env}$ **is the ambient temperature, and k is the cooling constant.**
- **Explanation: The rate at which an object cools is proportional to the difference between its temperature and the surrounding temperature.**
- **Real-life example: Cooling of a cup of coffee, or cooling of a metal after heating.**

## 6. Investment Growth in Economics

- **Model: :** $\frac{dI}{dt} = rI$ **, where I(t) is the investment amount and r is the growth rate.**
- **Explanation: Investment returns can grow exponentially when returns are reinvested, leading to compound growth.** **REAL-LIFE EXAMPLE: The growth of a stock portfolio in the stock market.**

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

**Date: 30-09-2024**

# OUTCOMES OF THE PROGRAM

**Students will be able to**

- identify first order ordinary differential equations.
- understand basic concepts of higher order ordinary differential equations.
- solve linear differential equations using different methods.
- prove theorems, solve ordinary differential equations.
- apply concepts of ordinary differential equations and applications including real life problems.

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District- 533216

## DEPARTMENT OF MATHEMATICS

Date:30-09-2024

Topic: Applications of Mathematics in Various Fields Time: 10 AM

### GUEST LECTURE ATTENDANCE SHEET

| S.No | Name of the student | Class | Group | Roll No | Signature of the student |
|---|---|---|---|---|---|
| 1. | P Bhanu prakash | I. BSC | Computers | 05 | P Bhanuprakash |
| 2 | Pandu venkata Naveen | I BSc | chemistry | 08 | P.V. Naveen |
| 3 | P. Venkata Ganesh | I. BSC | computers | 06 | P.V. Ganesh |
| 4 | M. chaitanya Swathi anya Poleyad. | I. BSC | chemistry | 10 | M.Ch.S. Poleyad |
| 5 | B. Murali Ram kumar | I. BSc | Chemistry | 03 | B. Murali Ram kumar |
| 6. | G. yogendhra | I B.Sc | chemistry | 04 | G. yogendhra |
| 7. | Gollala prasanth kumar | I. BSc | chemistry | 11 | G.P.kumar |
| 8 | D. Naga Sanjay | I BSc | chemistry | 12 | D. N. Sanjay |
| 9. | Gubbala Bhavana Vijaya Sree | IBSc | chemistry | 05 | G. Bhavana Vijaya Sree |
| 10 | Koppisetti Sai ganga pravallika | IBSC | chemistry | 06 | K. Sai ganga pravallika |
| 11. | Balasadi. Bhargavi. lakshmi | IBSc | chemistry | 02 | B.B. lakshmi |
| 12. | Kolisetti. Pavani lakshmi Durga | I BSc | computers | 03 | K. Pavani |
| 13. | V. Mounika | I BSc | Computers | 07 | V. Mounika |

| | | | | | |
|---|---|---|---|---|---|
| 14. | J.V.S.S Sureeka | 1st BSc | Computers | 02 | J.V.S.S Sureeka |
| 15. | G. Divya | 1st BSc | Computers | 01 | G. Divya |
| 16. | M. Satya Sri | 1st BSc | Chemistry | 09 | M. Satya Sri |
| 17. | D. Mahalakshmi | III BSC | MPCS | 4 | D. Mahalakshmi |
| 18. | Ch. Navya | III BSC | MPCS | 03 | Ch. Navya |
| 19. | K. kushideepika | III BSC | MPCs | 07 | K. kushideepika |
| 20. | T. Soujanya | III BSC | MPCs | 16 | T. Soujanya |
| 21. | P. Sravanthi | III BSC | MPCS | 12 | P. Sravanthi |
| 22. | S. Durgalakshmi | III BSC | MPCs | 15 | S. Durgalakshmi |
| 23. | ch. Vijaya Sri lakshmi | III BSC | MPCs | 02 | ch. Vijaya Sri lakshmi |
| 24. | P. Bhumya | III BSC | MPCs | 13 | P. Bhumya |
| 25 | U. Anitha | III BSC | MPCs | 17 | U. Anitha |
| 26 | L Prameela | III BSC | MPCs | 09 | L. Prameela |
| 27. | K. Haritha | III BSC | MPCs | 08 | K. Haritha |
| 28. | V. Vannu prasanna | III BSC | MPCS | 18 | V. Vannu prasanna |
| 29. | G. Mounika | III BSC | MPCS | 05 | G. Mounika |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

30.9.24

Signature of the Principal

PRINCIPAL
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dt.B.R. Ambedkar Konaseema Dt. A.P.

30/9/24

Signature of the Lecturer in charge

K.CHITTIBABU
M.Sc, CSIR-JRF, NET
Lecturer In Incharge
Department of Mathematics
Govt. Degree College
MUMMIDIVARAM - 533216
Dt. B.R.Ambedkar Konaseema Dist, A.P.

Estb: 2021
Mail: gdcmummidivaram.jkc@gmail.com

Office : 08862 93784
Principal: 9866668182

GOVERNMENT DEGREE COLLEGE,
MUMMIDIVARAM
Dr.B.R.AMBEDKAR KONASEEMA
DISTRICT- 533216

Dr.S.PRABHAKAR M.A., Ph.D
Principal

Mummidivaram,
Dt: 30-09-2024

# ATTENDANCE CERTIFICATE

This is to certify that Dr.D.CH.Paparao, Senior Lecturer, Deparatment of Mathematics, V.K.V.Govt Degree College, Kothapeta attended and delivered a talk on **"Applications of Differential Equations in Various Fields"** on 30.09.2024 at Government Degree College, Mummidivaram. The Lecture is very useful to educate and enlighten our students about the applications of Mathematics in Various fields.

PRINCIPAL 30.9.24

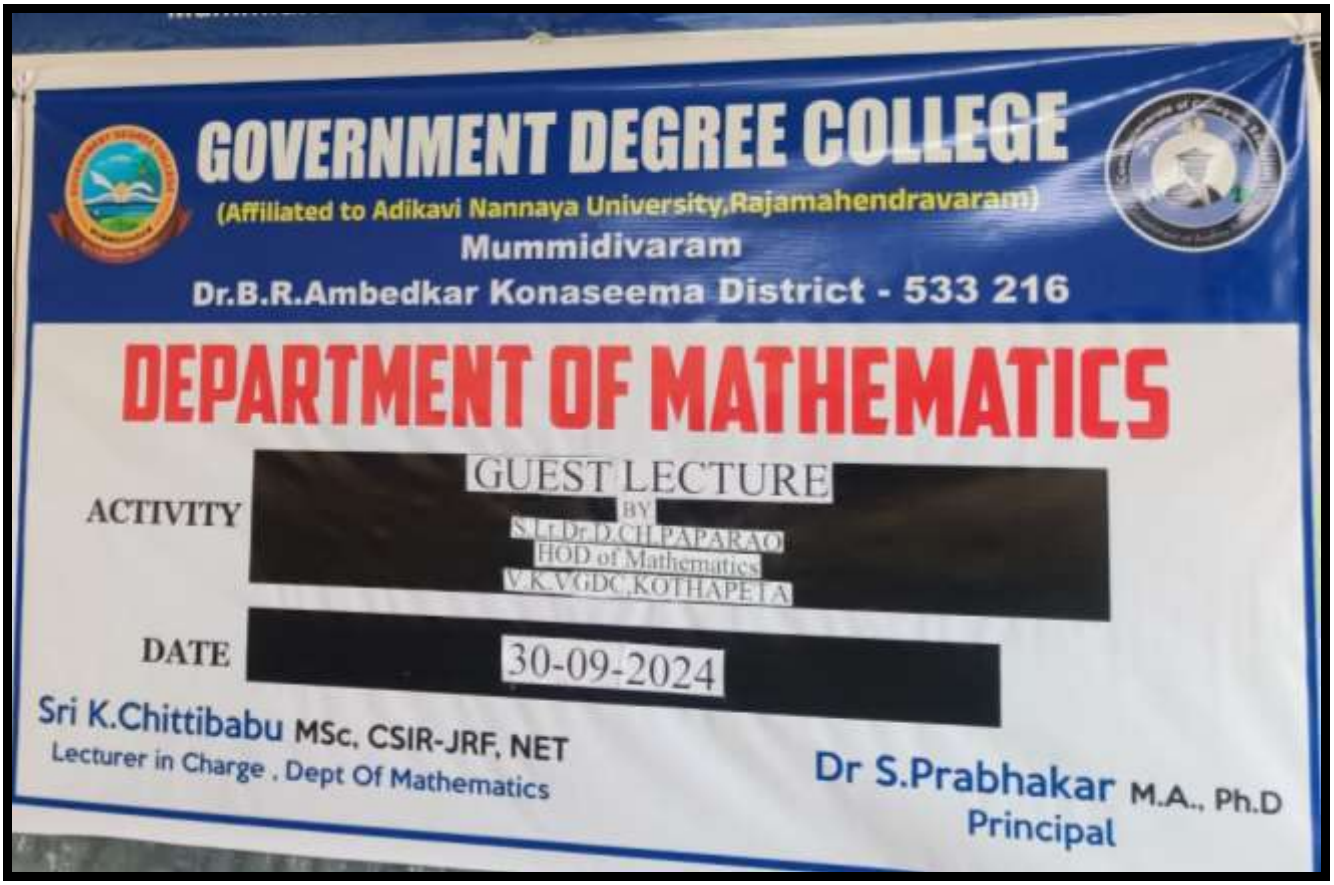
PRINCIPAL
GOVERNMENT DEGREE COLLEGE
MUMMIDIVARAM - 533 216
Dr.B.R. Ambedkar Konaseema Dt. A.P.

# GOVERNMENT DEGREE COLLEGE
# MUMMIDIVARAM
# Dr.B.R.Ambedkar
# Konaseema District-533216

## DEPARTMENT OF MATHEMATICS

**Date: 30-09-2024**

## PHOTOS OF THE PROGRAM




**Inviting Guests to the dais by Sri D.Pallamraju, Lecturer in Chemistry**


**Opening remarks by the Principal: Dr.S.PRABHAKAR garu**


**Prayer by final year Studetns: D.Mahalakshmi, T.Sowjanya**


**Introduction of Resource Person: Dr.G.Sujatha garu, Lecturer in English.**

**Briefing by Sri.K.CHITTI BABU, VICE-PRINCIPAL and HOD of Mathematics Government Degree College, MUMMIDIVARAM.**

**Guest Lecture by S.Lt Dr.D.CH.Paparao, H.O.D, Department of Mathematics, V.K.V.GDC, Kothapeta.**


**Feedback given by Student Kumari L.Prameela, III B.Sc (M.P.Cs)**



**Felicitation to the Resource Person by Principal, Staff & Students**

**Vote of Thanks by Sri.K.CHITTI BABU, VICE-PRINCIPAL and HOD of Mathematics, Government Degree College, MUMMIDIVARAM.**


**National Anthem by Principal, Staff and Students.**