TaranathShikshanaSamsthe
Laxmi Venkatesh Desai college, Raichur
Affiliated to Raichur University, Raichur& Re-accredited by NAAC with B Grade

Index for Add-On Course

Title: __Gravitation__

Academic Year: __2022-23__

S.No	Particulars	Page no
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Taranath Shikshana Samsthe

LAXMI VENKATESH DESAI COLLEGE, RAICHUR-584103.

(Affiliated to Raichur University, Raichuri. Re-Accredited by NAAC with "B" Grade)

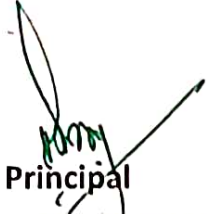Office of the Principal

Dr.Venkatesh B. Devaru, *M.Sc.,Ph.D.,MBA.*
PRINCIPAL

Ph:(08532)-240286, 240707
Fax:+918532 240707
e-mail: lvdrcr@gmail.com
Website: www.lvdcollege.com

Date: 3/3/2023

TO WHOMEVER IT MAY CONCERN

This is to certify that, the college has introduced the Add_On course on, "Gravitation" with the duration of 30 hours introduced in 2022-23. The said programme is apart from the existing course curriculum.

Head of the Department
Head of the Physics Department
L.V.D. College,
RAICHUR-584101

Principal
PRINCIPAL
L.V.D. College, RAICHUR-03.

Date: 03.03.2023

To
The Principal,
LVD College, Raichur.

From
Head
Department of Physics

Respected Sir,

Sub: Permission to start an Add _On course

With respect to the above sited subject I, the undersigned request you to grant permission to start an Add-on course titled **"GRAVITATION"** to B.Sc I/II/III year students. The details of syllabus and duration are enclosed. This course helps students to build up their skills. Kindly grant the permission.

Thanking You,

Yours Faithfully,

Permitted

PRINCIPAL
L.V.D. College, RAICHUR-03.

Taranath Shikshana Samsthe

LAXMI VENKATESH DESAI COLLEGE, RAICHUR-584103.

(Affiliated to Gulbarga University, Kalaburagi. Re-Accredited by NAAC with "B" Grade)

Dr.Venkatesh B. Devaru, *M.Sc.,Ph.D.,MBA.*
PRINCIPAL

Office of the Principal
Ph:(08532)-240286, 240707
Fax:+918532 240707
e-mail: lvdrcr@gmail.com
Website:www.lvdcollege.com

Date: 24/02/2023

ORDER Sub: Meeting of Board of Studies members

A meeting of the following BOS constituted is hereby convened on 24/02/2023 at 11:00 AM in the Department of Physics. LVD College,Raichur

BOARD OF APPOINTMENT OF BOS MEMBERS FOR ADD-ONCOURSE GRAVITATION

1)	Dr. Yesappa L. Assistant professor of physics University of Agricultural sciences Raichur.	Chairman Assistant Professor of Physics College of Agricultural Engineering UAS, RAICHUR-584 104.
2)	DR. Vinayak Assistant Professor Department of Physics GFGC, Jewrgi	Member
3)	Dr.Chakradhar.B Head of the Department Department of Physics LVD College, Raichur	Member Head of the Physics Department L.V.D. College, RAICHUR-584 101

The Chairman and the members are requested to make it convenient to attend the BOS Meeting

PRINCIPAL
PRINCIPAL
L.V.D. College, RAICHUR-03.

DATE: 24.02.2023

To
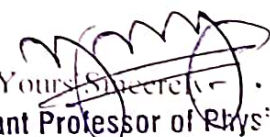The Principal,
LVD College,
Raichur.

Respected Sir,

Sub: Acceptance to be the chairman of BOS.

with reference to the above-cited subject I Dr. Yesappa L.Assistant professor of physics University of Agricultural sciences Raichur, received your letter of request to be a Chairman of BOS, for the Add-on Course to be conducted by your college.

Hence, I give my consent and accept your request as a BOS Chairman.

Thanking You.

Yours Sincerely,
Assistant Professor of Physics
College of Agricultural Engineering
UAS, RAICHUR-584 104,

DATE: 24.02.2023

To
The Principal,
LVD College,
Raichur.

Respected Sir,

Sub: Acceptance to be a Member of BOS.

with reference to the above-cited subject I. **Dr Vinayak Assistant**
Professor Department of Physics GFGC, Kalaburagi. received your letter of
request to be a Member of BOS. for the Add-on Course to be conducted by your
college

Hence. I give my consent and accept your request as a BOS Member.

Thanking You,

Yours Sincerely

2022-23

DEPARTMENT OF PHYSICS

OFFERS COURSE ON GRAVITATION

PRINCIPAL
L.V.D. College, RAICHUR-03.

course outcomes :

» Make it sure that the student learns the concepts given

Gravitational force and calculation of gravitational force Between any two objects.

» Gravity as a special case of gravitation, acceleration due to gravity(g).

» Factors affecting 'g', weight and difference between mass & weight

To Enroll contact :

Miss. Chaitra (Department of physics)

Mrs. Vimala K R (Department of physics)
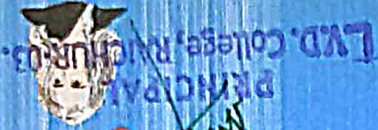
IN THIS COURSE

Terrestrial Gravity: Galileo Analyzes a Cannonball Trajectory, Moving Up: Newton Puts the Cannon on a Very High Mountain, Onward into Space: The Cannonball and the Moon, Newton's Universal Law of Gravitation;

Introduction-Field from a Single Point Mass, Gravitational Field for Two Masses, The Principle of Superposition, Field Strength at a Point Equidistant from the Two Masses, Gravitational Field from a Ring of Mass, Field Outside a Massive Spherical Shell, Field Outside a Solid Sphere.

Gravitational Potential Energy near the Earth, Onward and Upward Gravitational, Potential Energy in a Two Body System Gravitational Potential Escape, Potential and Kinetic Energy in a Circular Orbit.

Enroll now !

Internal Quality Assurance Cell (IQAC)
Laxmi V... RAICHUR-03.
Co-ordinator

LaxmiVenkatesh Desai College, Raichur

Affiliated to Gulbarga University, Kalaburagi& Re-Accredited by NAAC with B Grade

Department of Physics

Notice

All the B.Sc I/II/III year Semester students are here by informed that department of physics is introducing Add-on course titled "GRAVITATION "interested students, should register their name to the course coordinator for the certificate course in physics department at on or before 20-03-2023 1:40 PM to 2:30 PM.

BCA Ist year

B. ca II year.

B. A I year

Rivit

BCA 2 year

BSc-I year

Head of the Physics Department
L.V.D. College,
RAICHUR-584 101

<center>SYLLABUS</center>

GRAVITATION

COURSE OUTCOMES.

- Make it sure that the student learns the concepts given Gravitational force and calculation of gravitational force between any two objects.
- Gravitational force as a two body problem.
- Gravity as a special case of gravitation, acceleration due to gravity(g),
- factors affecting 'g', weight and
- difference between mass & weight

UNIT – I- DISCOVERING GRAVITY   15hours

Terrestrial Gravity: Galileo Analyzes a Cannonball Trajectory,Moving Up: Newton Puts the Cannon on a Very High Mountain,Onward into Space: The Cannonball and the Moon,Newton's Universal Law of Gravitation,Describing the Solar System: Kepler's Laws,Mathematical Interlude: Ellipses How Newton's Law of Universal Gravitation Explains Kepler's Laws,Kepler's Second Law Kepler's Third Law (well, for circular orbits

UNIT – II- VISUALIZING GRAVITY: THE GRAVITATIONAL FIELD   10hours

Introduction,Field from a Single Point Mass,Gravitational Field for Two Masses,The Principle of Superposition,Field Strength at a Point Equidistant from the Two Masses,Gravitational Field from a Ring of Mass,Field Outside a Massive Spherical Shell,Field Outside a Solid Sphere,Field Inside a Spherical Shell,Field Inside a Sphere: How Does g Vary on Going Down a Mine?
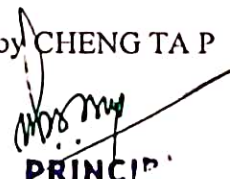
UNIT – III- WORKING WITH GRAVITY: POTENTIAL ENERGY   05hours

Gravitational Potential Energy near the Earth,Onward and Upward Gravitational, Potential Energy in a Two Body System Gravitational Potential Escape!, Potential and Kinetic Energy in a Circular Orbit.

Reference.

1. Gravitation: Foundation and frontiers by padmanabhan.
2. Gravitation(physics series) by charls W Misner and S throne.
3. Principles and Gravitation by berry.
4. Relativity, Gravitation and cosmology: "A BASIC INTRUCTION" by CHENG TA P

PRINCIP
L.Y.D. College, RA..... ...

LAXMI VENKATESH DESAI COLLEGE , RAICHUR.

ADD ON COURSE TIME TABLE FOR B.Sc II, IV & VI SEMESTER, DEPARTMENT OF PHYSICS, 2022-23.

TIME → DAYS ↓	09-30 TO 10-20 AM (THEORY)	10-20 TO 12-00 PM (IV SEM LAB)	12-00 TO 12-50PM (THEORY)	12-00 TO 1-40PM (II SEM LAB)	01-40 TO 02-30 PM	02-30 TO 04-10 PM (VI SEM LAB)	04-10 TO 5-00 PM (THEORY)
Monday							ADD ON COURSE
Tuesday							ADD ON COURSE
Wednesday					LUNCH BREAK		ADD ON COURSE
Thursday							ADD ON COURSE
Friday							ADD ON COURSE
Saturday							ADD ON COURSE

Head of Department.
Head of the Physics Department
L. V. D. College,
RAICHUR-584 101

Principal
PRINCIPAL
L.V.D. College, RAICHUR-03.

LaxmiVenkatesh Desai College, Raichur

Affiliated to Gulbarga University, Kalaburagi & Re-Accredited by NAAC with B Grade

Attendence Sheet

Department of Physics

Attendance :2022-23   Value added certificate Course : GRAVITATION   Faculty Name:smt. VIMALA

Sl. No	Register No	Name of the Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1.	11752750	Poornima	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2.	S2184123	Vishwanatha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	
3.	S2184125	Pallavi	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
4.	S2184132	Vinitha	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	
5.	S2184134	Ayyappa	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
6.	S2184141	Sindhu	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
7.	S2184148	Shailaja	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	
8.	S2184153	Rohith R	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	
9.	S2184156	Saroja	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	
10.	S2184173	Mahesh	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
11.	S2184181	Anilkumar	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
12.	S2184195	M Sharath	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
		Sign of faculty																															

Signature of Faculty

Signature of HOD
L. V. D. College,
RAICHUR-584101.

Signature of Principal
PRINCIPAL
L.V.D. College, RAICHUR-03.

S NO	Register No	Name of the Student	COURSE TITLE : GRAVITATION																FACULTY NAME:													
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
12.	2184133	SHASHIREKHA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
13.	2184141	SINDHU	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14.	2184153	ROHIT R	P	P	P	A	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P
15.	2184161	GEETANJALI	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P
16.	2184176	ANNAMMA	P	P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P
17.	2184193	BOODIBASAVA	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P
18.	2184206	SHILPA	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P
19.	2184210	M D FAZIL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P
20.	2184220	MD SHAHEBAAZ	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21.	2184225	GOUTAMI	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P
22.	21842620	KAVYA	P	P	P	P	P	P	P	P	P	P	P	A	P	P	A	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P
23.	2184313	SUSHMAKUMARI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P
24.	2184326	RENUKA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P
25.	2184346	AKILA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	A	P	P	A	P	P
26.	2184364	AMARESH	P	P	P	P	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P
27.	2184376	NAGARAJ	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
28.	2184396	TANUJA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
29.	2184399	JYOTI	A	P	P	P	P	A	A	P	P	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
30.	2184400	VIJAYALAKSHMI	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	P
31.	2184423	VEERESH	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	P	P	P	P	P	P
Sign of Faculty																																		

Vimes

Signature of Faculty

Signature of HOD
L. V. D. College,
RAICHUR-584 101.

Signature PRINCIPAL
L.V.D. College, RAICHUR-03,

LaxmiVenkatesh Desai College, Raichur

Affiliated to Gulbarga University, Kalaburagi& Re-Accredited by NAAC with B Grade

Department of Physics

Report of Add_On course

Department of Physics conududcted add-on Course for the interested students from 27.03.2023 to 28.04.2023. Around 32 students were enrolled for the course. After completing this course the students were enable to understand about discovery and visualization of gravity and potential energy related to it. Students have taken the benefits from the course.

Duration :30 hrs

Started on: 27.03.2023

Completed on: 28.04.2023

Name of the Faculty : Smt.Vimala

Total No of Students admitted: 31

Total No of classes admitted: 30

Total No of Students benefited: 31

Vimey

Smt. Vimala.

Dept of Physics

Taranath Shikshana Samsthe

LAXMI VENKATESH DESAI COLLEGE RAICHUR

(Re-Accredited by NAAC with 'B' Grade)

Certificate

This is to Certify that Miss. / Mr. ....**Poornima**..........

of ....**B.Sc**.......... has completed the Certificate Course in

GRAVITATION..........

Conducted by the Department of ....**Physics**.......... from

..**02-02-2023**..to ..**27-03-2023**..

Head of the Department

Principal

Taranath Shikshana Samsthe

LAXMI VENKATESH DESAI COLLEGE RAICHUR

(Re-Accredited by NAAC with 'B' Grade)

Certificate

This is to Certify that Miss. / Mr. _____ Vishwanath _____

of _____ B.Sc. _____ has completed the Certificate Course in

_____ GRAVITATION _____

Conducted by the Department of _____ Physics _____ from

02-02-2023 to 27-03-2023

Head of the Department

PRINCIPAL
L.V.D. College RAICHUR

Principal

Taranath Shikshana Samsthe

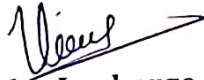# Laxmi Venkatesh Desai College, Raichur.

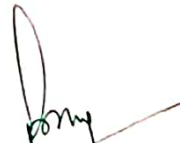Affiliated to Gulbarga University, Kalaburagi & Re-Accredited by NAAC with B Grade

Course Completion Certificate

This Certificate is awarded to Miss/Mr. **VINITHA**

for successfully completing the course in" GRAVITATION" conducted by Department of Physics in the

year 2022-23.

Faculty In charge

Head of the Department
Head of the Physics Department
L. V. D. College,
RAICHUR-584 101.

Principal
PRINCIPAL
L.V.D. College, RAICHUR-03.

Taranath Shikshana Samsthe's

LAXMI VENKATESH DESAI COLLEGE, RAICHUR.
DEPARTMENT OF PHYSICS

Course Title – Gravitation

Max Marks: 40

Time: 30 Minutes

Instructions to candidates:

1. Answer all the questions.

---

1. The law of gravitation describes the gravitational force between

   a. any two bodies having mass
   b. earth and point.mass only
   c. earth and Sun only
   d. two charged bodies only

2. The Earth's atmosphere is held by the

   a. Wind
   b. Clouds
   c. Earth's magnetic field
   d. Gravity

3. Which of the following factors does the acceleration due to gravity on the Earth depend upon?

   a. Mass of the Body
   b. Mass of the Earth
   c. The volume of the Body
   d. Shape and Size of the Body

4. Which of the following is true when a Mango falls from a Mango Tree?

   a. Only the Earth attracts the Mango.
   b. Only the Mango attracts the Earth.
   c. Both Mango and Earth attract each other
   d. Both Mango and Earth repel each other

5. The weight of an object on the Moon's surface is

   a. $1/3^{rd}$ of the weight on Earth
   b. $1/5^{rd}$ of the weight on Earth
   c. $1/6^{th}$ of the weight on Earth
   d. $1/2^{nd}$ of the weight on Earth

6. What is the value of the acceleration due to gravity on the surface of the Earth?

   a. $9.8 \ m/s^2$
   b. $18.8 \ m/s^2$
   c. $4 \ m/s^2$
   d. $12 \ m/s^2$

7. What holds the Earth's atmosphere?

   a. Gravity
   b. Clouds
   c. Wind
   d. Earth's Magnetic Field.

8. The gravitational force between two bodies does not depend on

   a. their masses
   b. their separation
   c. the product of their masses
   d. the medium between two bodies

9. When a planet orbits the Sun, one of the foci of the elliptical orbit is

   a. The axis
   b. The perihelion
   c. The centre
   d. The Sun

10. What has an eccentricity of zero?

    a. A straight line
    b. A large ellipse
    c. A circle
    d. A small ellipse

11. An Astronomical Unit, or AU, is the average distance between

    a. The Sun and Neptune
    b. The Sun and Earth
    c. The Earth and the Moon

12. Kepler's second law is known as

    a. The Law of Orbits
    b. The Law of Areas
    c. The Law of Periods
    d. The Law of Gravity

13. Kepler's 2nd law deals with

    a. The shape of the planet's orbits
    b. The speed/area the planet travels
    c. The length of time it takes the planet to orbit the sun
    d. Time travel

14. Kepler's third law is known as

    a. The Law of orbits
    b. The Law of Areas
    c. The Law of periods
    d. The Law of gravity

15. The formula for Kepler's third law is

   a. $P^3 \propto a^2$
   b. $P^3 \propto a^3$
   c. $P^2 \propto a^2$
   d. $P^2 \propto a^3$

16. Kepler's first law states that the orbits of the planets are oval in shape or

   a. Ellipses
   b. Perfect circles
   c. Squares
   d. triangles

17. The Kepler's first law is known as

   a. The law of orbits
   b. The law of areas
   c. The law of periods
   d. The law of gravity

18. The farther away a planet is from the sun, the .... it takes it to orbit the sun once

   a. Longer
   b. Shorter

Laxmi Venkatesh Desai College, Raichur

Affiliated to Gulbarga University, Kalaburagi& Re-Accredited by NAAC with B Grade

Value added certificate Course: GRAVITATION
Marks Sheet

SL.NO	REGISTER NUMBER	NAME OF THE STUDENT	MARKS
1.	11752750	POORNIMA	37
2.	2184123	VISHWANATH	38
3.	2184125	PALLAVI	38
4.	2184132	VINITHA	39
5.	2184134	AYYAPPA	39
6.	2184141	SINDHU	40
7.	2184148	SHAILAJA	40
8.	2184153	ROHIT R	39
9.	2184156	SAROJA	39
10.	2184173	MAHESH	39
11.	2184181	ANILKUMAR	38
12.	2184195	M SHARATH	38
13.	2184133	SHASHIREKHA	39
14.	2184141	SINDHU	39
15.	2184153	ROHIT R	39
16.	2184161	GEETANJALI	39
17.	2184176	ANNAMMA	39
18.	2184193	BOODIBASAVA	39
19.	2184206	SHILPA	40
20.	2184210	M D FAZIL	40
21.	2184220	MD SHAHEBAAZ	39
22.	2184225	GOUTAMI	39
23.	2184262	KAVYA	40
24.	2184313	SUSHMAKUMARI	38
25.	2184133	RENUKA	39
26.	2184141	AKILA	40
27.	2184153	AMARESH	40
28.	2184161	NAGARAJ	40
29.	2184176	TANUJA	40
30.	2184193	JYOTI	40
31.	2184206	VIJAYALAKSHMI	38
32.	2184210	VEERESH	39

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