

**1.2.1. Report of Add-On Courses  
(2021 – 22)**

**Chemistry of Cosmetics**  
**Department of Chemistry**  
**2021 – 22**



# MAHATMA GANDHI COLLEGE

THIRUVANANTHAPURAM

POST GRADUATE DEPARTMENT OF CHEMISTRY & RESEARCH  
CENTER

## NOTICE

### ADD-ON COURSE –CHEMISTRY OF COSMETICS

Department of chemistry is conducting an Add-On course titled "Chemistry of Cosmetics" for the academic year 2021-2022. This course aims to provide students with an in-depth understanding of cosmetic chemistry.

Course Duration: 30 hour

**Last Date for Registration: 6/6/21**

For any queries or additional information, please contact the course coordinator, Head, Department of Chemistry.

Head, Department of Chemistry

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P.G. Dept. of Chemistry & Research Centre  
Mahatma Gandhi College  
Thiruvananthapuram

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# SYLLABUS

## ADD-ON COURSE IN CHEMISTRY OF COSMETICS

### Unit I. Cosmetics

12 hour

Shampoos: Ingredients and function, Different kind of shampoos, (Anti-dandruff, anti-lice, herbal and baby shampoos), Tooth paste: Composition and health effects. Hair dye: Chemicals used and its harmful effects. Face and skin powders: Types, ingredients and function. Cleansing creams, Cold creams vanishing creams and bleach creams, nail polishes, lipsticks, eyebrow pencil and eye liners (ingredients and functions)- Harmful effect of cosmetics.

### Unit II. Soaps

12 hour

Introduction of soaps, raw materials for soaps and their selection, selection of other auxiliary raw materials. General principles of soap making, chemistry of soap boiling and saponification reaction, manufacture of soap (cold, hot and semi boiled process), bleaching of soap, and manufacture of toilet soap.

### Unit III. Soap Making

6 hour

History about soap making, the Science of making Soap, different soap making techniques, step by step instructions on how to make soap, some problems and answers to soap making.

  
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# ADD-ON COURSE IN CHEMISTRY OF COSMETICS

## LIST OF BOOKS

S. No	Author	Title	Edition	Publisher
1	B K Sharma	Industrial Chemistry		Krishna Prakasan Media
2	M SR Winter	A Consumers Dictionary of Cosmetic Ingredients	Seventh	Three rivers press, New York
3	K.S. Parasuram	Soaps & detergents		
4	J.G. Kane	Soaps: Their Chemistry & Technology	First	Dr. R. Sarkarar
5	NIIR Board	The Complete Technology Book on Soaps		Asia Pacific Business Press

### Course Outcome:

CO 1 : Classify and define different cosmetic products use in our daily life.

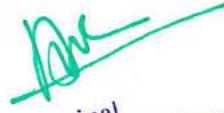
CO 2 : Formulate cosmetic for skin care and hair as well as dental and oral care.

CO 3 : Describe chemistry behind the soap.

CO 4 : Describe the fundamentals of soap making methods.




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Academic <sup>YEAR</sup> 2021-2022		
Cosmetic Chemistry Batch -1		
Sl.No	Name	Candidate Code
1	Goutham Mohan Y.M	23520118021
2	Salmiya S	23520118032
3	Anakha S.R	23520118008
4	Bhagya Soman U.S	23520118051
5	Adithya Vinod	23520118037
6	Megha M.S	23520118046
7	Chaithanyan R	23520118048
8	Sreelekshmy Sunil	23520118055
9	Gokul G.R	23520118052
10	Lakshmy B	23520118045
11	Aneesh S	23520118041
12	Sonjith Suresh	23520118033
13	Priyadarshini P.S	23520118047
14	Anjali P.S	23520118010
15	Adithya K.H	23520118004
16	Athira B.S	23520118016
17	Vaishnavy A.R	23520118049
18	Silpa B.S	23520118054
19	Panchami Krishna P	23520118028
20	Aswathy S.R	23520118015
21	Aiswarya M.S	23520118005
22	Aparna S Nair	23520118012
23	Parvathy Nair A.V	23520118029
24	Jayanth J.S	23520118025
25	Farsana Sunil	23520118020
26	Arya A.S	23520118014
27	Abhaya Vinesh	23520118001
28	Aiswarya B	23520118006
29	Anuja	23520118050
30	Gouri M.S	23520118043
31	Devika A.J	23520118019
32	Gayathri A.S	23520118058
33	Ananthu A.S	23520118009
34	Supriya Rani	23520118034
35	Adarsh Krishna	23520118003
36	Akhil Krishna	23520118077
37	Athira O	23520118017
38	Bharath S Krishna	23520118018
39	Abhinav V.K	23520118002
40	Aswathy C	23520118015
41	Govind P	23520118022
42	Hariprasad	23520118023
43	Harsha G.S	23520118024
44	Remya P	23520118027
45	Priyadarshini S	23520118030
46	Krishnavinod	23520118031
47	Umeshdev V.K	23520118035


  
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48	Abhijith A.S	23520118036
49	Amaldev L	23520118038
50	Anandu A	23520118039
51	Ananthykrishna	23520118040
52	Aswanth S.R	23520118047
53	Jishnu siva S	23520118042
54	Sabarinath K.G	23520118044
55	Vaishakh N	23520118053
56	Amaljith A.L	23520118057

  
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Academic Year 2021-2022		
Cosmetic Chemistry Batch-II		
Sl.No	Name	Candidate Code
1	Abhimanyu H	23521118001
2	Abinav V.R	23521118002
3	Abhirami B.R	23521118003
4	Anandu A.B	23521118004
5	Ananthu Unnithan	23521118005
6	Anaswara P.S	23521118006
7	Anjalikrishna K.M	23521118007
8	Anujith Ram	23521118008
9	Arathy S	23521118009
10	Aswathy V.R	23521118010
11	Bhagyalekshmy R	23521118011
12	Devendu S.N	23521118012
13	Ganga R	23521118013
14	Meenu p.s	23521118014
15	Mithun G.M	23521118015
16	Neha S.N	23521118016
17	Praveen G	23521118017
18	Renjith R.S	23521118018
19	Sivananda M	23521118019
20	Sivarenjana R.S	23521118020
21	Siya S Nair	23521118021
22	Sooraj S.S	23521118022
23	Sravya S.S	23521118023
24	Sreelekshmy B.J	23521118024
25	Sreelal L.S	23521118025
26	Abhilash J	23521118026
27	Abhinav S	23521118027
28	Abin Das M.B	23521118028
29	Adithya L.R	23521118029
30	Akhila B	23521118030
31	Amritharani P.K	23521118031
32	Ananthakrishnan A	23521118032
33	Ardrac G	23521118033
34	Aswathy S Nair	23521118034
35	B.S Adidev	23521118035
36	Devika B.V	23521118036
37	Devipriya R	23521118037
38	Gourinanda K.A	23521118038
39	Kavya J	23521118039
40	Krishnendu S	23521118040
41	Lekshmy P	23521118041
42	Megha Manoj R	23521118042
43	Nandana S.R	23521118043
44	Pranav R.B	23521118044
45	Rohit S.S	23521118045
46	Sabarinath S.P	23521118046
47	Sreeraj S	23521118047

  
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48	Adithyakrishna A	23521118048
49	Anoop S	23521118049
50	Aswathy Krishna	23521118050
51	Athira R.S	23521118051
52	G.A Gopikrishnan	23521118052
53	Jagannath S	23521118053
54	Vyshnavi V.S	23521118054
55	Gokulkumar A.G	23521118055

  
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**MAHATHMAGANDHI COLLEGE, THIRUVANATHAPURAM**

**DEPARTMENT OF CHEMISTRY**

**Add on Course Examination**

**March 2023**

Mark : 10

Time : 15 min

1. Which of the following ingredients can be used for thickening of shampoos
  - a. Glycerine and Lactic acid
  - b. Sodium Chloride and carboxymethyl cellulose
  - c. Bentonite and Beeswax
  
2. Castor oil is used in lipsticks for
  - a. Giving a shine
  - b. Building viscosity
  - c. Dispersing color
  
3. Which category of the ingredient is used for imparting flexibility to the film of a nail polish
  - a. Pigment
  - b. Thixotropic agent
  - c. Plasticizer
  
4. Beeswax is obtained from
  - a. Kernel of palm tree
  - b. Petroleum
  - c. Bee hives

5. Mascara is used for

- a. Applying on the eyebrows
- b. Thickening and lengthening the eyelashes
- c. Applying on the eyelids

6. Which of the following is a requirement for an ideal sunscreen agent

- a. An electron withdrawing group, an electron donating group and a benzene ring
- b. Methyl group, a methoxy group and a sodium ion
- c. A carbonyl group, a cyano group and a chloride ion

7. An agent used to clean the surface of teeth and decreases the tooth decay, mouth odour is

- a. Abrasive
- b. Dentifrice
- c. Dental cone

8. A toothpaste ingredient, Rennou TM is

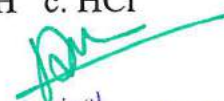
- a. Anti-hypersensitivity agent
- b. Fluoride
- c. Antibacterial agent

9. Which of the following is not the oral cavity disease

- a. Mouth ulcer
- b. Goiter
- c. Bleeding gums

10 The saponification of a fat or oil is done using \_\_\_\_\_ solution for hot process.

- a. KOH
- B. NaOH
- c. HCl

  
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### SUMMARY REPORT OF ADD-ON COURSE – CHEMISTRY OF COSMETICS (2021-2022)

Considering the huge applications and harmful effect of cosmetics, the department of chemistry started an Add on course on chemistry of cosmetics in the academic year 2021-2022, hundred and eleven students were enrolled for the course. Classes conducted from 08/06/2021 to 15/03/22 for 30 hours. In this course we concentrated on the the chemistry aspects of cosmetics. After the completion of the course, students were assessed by written examination. Those who secured 60% marks and above in written examinations were honoured by certificates .



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Cosmetic Chemistry

SE

11

Batch - I (2021-22)

1.	Gautham Mohan Y.M	23520118021	10
2.	Salmiya S.	23520118032	10
3.	Anakha S.R	23520118008	10
4.	Bhagya Soman U.S.	23520118051	10
5.	Adithya Vinod.	2352011037	7
6.	Megha M.S.	23520118046	7
7.	Chaitanyan R	23520118048	6
8.	Sreelekshmi Sunil.	23520118055	8
9.	Gokul G.R	23520118652	8
10.	Lakshmi B.	23520118045	9
11.	Aneesh S.	23520118041	10
12.	Sonjith Suresh.	23520118033	10
13.	Priyadarsini P.S.	23520118047	10
14.	Anjali P.S.	23520118010	10
15.	Adithya K.H	23520118004	9
16.	Athira B.S	23520118016	8
17.	Vychnam A.R	23520118049	10
18.	Silpa B.S.	23520118054	9
19.	Panchami Krishna.P	23520118028	10
20.	Aswathy S.R	23520118015	10
21.	Aiswarya M.S.	23520118005	8
22.	Aparna S. Nair	23520118012	9
23.	Parvathy Nair A.V.	23520118029	8
24.	Jayanth J.S.	23520118025	10
25.	Farsana Sunil.	23520118020	10
26.	Arya A.S.	23520118014	10
27.	Abhaya Vinesh	23520118001	9
28.	Aiswarya B	23520118006	8
29.	Anuja	23520118050	7
30.	Chouri M.S	23520118043	7
31.	Devika A.J	23520118019	8
32.	Gayathri A.S	23520118058	8

## Batch-II (2021-22)

2352018024	10	1. Abhimanyu H.	23521118001	7
23520118003	9	2. Abinav V.R	23521118002	10
23520118017	8	3. Abhiramy B.R	23521118003	10
23520118017	7	4. Anandu A.B	23521118004	8
23520118018	6	5. Ananthu unmathan	23521118005	8
23520118002	6	6. Anaswara P.S	23521118006	7
23520118015	9	7. Anyalishna K.M.	23521118007	9
23520118022	8	8. Anujith Ram	23521118008	10
23520118023	9	9. Anathy S.	23521118009	10
23520118024	9	10. Aswathy V.R	23521118010	10
23520118027	9	11. Bhagya Lakshmi R.	23521118011	10
23520118030	8	12. Devendu S.N	23521118012	10
23520118031	7	13. Changa R.	23521118013	9
23520118035	8	14. Meenu P.S.	23521118014	9
23520118036	9	15. Mithun G.M	23521118015	8
23520118038	10	16. Neha S.N	23521118016	7
23520118039	10	17. Praveen G.	23521118017	7
23520118040	9	18. Renjith R.S	23521118018	7
23520118042	8	19. Sivananda M.	23521118019	8
23520118042	7	20. Siva renjana R.S	23521118020	9
23520118050	6	21. Siya S. Nay	23521118021	8
23520118050	6	22. Sooray.S.S	23521118022	9
23520118056	6	23. Sravya S.S	23521118023	10
23520118057	9	24. Sree Lakshmi B.J	23521118024	10
		25. Sreelal L.S	23521118025	9
		26. Abhilash J	23521118026	10
		27. Abhinav S.	23521118027	10
		28. Abin Das M.B	23521118028	9
		29. Adithya L.R	23521118029	8
		30. Akhila B.	23521118030	7
		31. Amritha Rani P.K	23521118031	6
		32. Ananthakrishnan A.	23521118032	8
		33. N. I		

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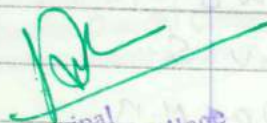
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34.	Aswathy S. Nair	2352118034	10
35.	B.S Adiclev	2252118035	9
36.	Devika .B.V.	2352118036	10
37.	Devpriya R	23521118037	9
38.	Govrinanda k.A	23521118038	8
39.	Kavya J	23521118039	7
40.	Krishnendu S.	23521118040	7
41.	Lekshmy P.	23521118041	8
42.	Megha Manoy R.	2352118042	9
43.	Aradhana S.R	2352118043	10
44.	Pranav R.B	2352118044	10
45.	Rohit S.S	2352118045	9
46.	Sabarinath S.P	2352118046	8
47.	Sreerag S.	2352118047	7
48.	Adithya krishn A	2352118048	6
49.	Anoop S.	2352118049	7
50.	Aswathy krishn	2352118050	8
51.	Athira R.S	2352118051	9
52.	A.A Gopikrishnan	2352118052	10
53.	Jagannath S.	2352118053	10
54.	Vyshnavi V.S	2352118054	10
55.	Arul kumar A.G.	2352118055	10



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**Mushroom Cultivation**

**Department of Botany**

**2021 – 22**





# MAHATMA GANDHI COLLEGE

THIRUVANANTHAPURAM

POST GRADUATE DEPARTMENT OF BOTANY & RESEARCH CENTER

## NOTICE

### ADD-ON COURSE –MUSHROOM CULTIVATION

Dear students,

We are excited to announce the introduction of an Add-On course titled "Mushroom Cultivation" for the academic year 2021-2022. This course aims to provide students with an in-depth understanding of mushroom cultivation techniques and their practical applications.

#### **Details of the Add-On Course:**

Course Duration: 3 months

Start Date: 02/07/2021

End Date: 28/10/2021

Time: 0 hr

Venue: Room 55

#### **Registration Details**

Last Date for Registration: 25/06/2021

Seats are limited, and admission to the course will be on a first-come, first-served basis. Interested students are encouraged to register at the earliest to secure their spot.

For any queries or additional information, please contact the course coordinator, Head, Department of Botany at the department office between 10:00 AM to 4:00 PM on weekdays.


Warm regards,

**Head, Department of Botany**

**Principal**  
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## OBJECTIVES OF THE COURSE

- **Understanding Mushroom Biology:** Studying mushroom cultivation involves gaining a deep understanding of the biology, life cycle, and growth requirements of different mushroom species.
- **Cultivating Edible Mushrooms:** One of the main objectives of studying mushroom cultivation is to produce edible mushrooms for consumption and commercial purposes. This involves learning about the specific cultivation techniques, substrate preparation, spawn production, and environmental conditions required for different mushroom species.
- **Disease Management:** Studying mushroom cultivation includes researching and developing strategies for the prevention and management of diseases that can affect mushroom crops. This objective focuses on understanding common pathogens, identifying disease-resistant strains, implementing proper sanitation practices, and exploring alternative disease control methods.
- **Economic Viability and Market Development:** This objective includes conducting market research, evaluating consumer preferences, analyzing production costs, and exploring value-added product development to support successful commercialization and entrepreneurship in the mushroom industry.

  
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## EXPECTED OUTCOMES OF THE COURSE

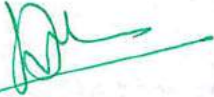
- **Increased Knowledge and Understanding:** Studying mushroom cultivation leads to a deeper understanding of mushroom biology, cultivation techniques, and the factors influencing mushroom growth and development.
- **Improved Cultivation Techniques:** Through research and study, new and improved cultivation techniques can be developed. Improved techniques can result in higher yields, better quality mushrooms, and more efficient production processes.
- **Enhanced Disease Management Strategies:** Research on mushroom cultivation helps in identifying and developing effective strategies for disease prevention, early detection, and management.
- **Sustainable Cultivation Practices:** Studying mushroom cultivation promotes the development and adoption of sustainable practices. This includes exploring alternative and renewable substrates, implementing recycling and waste management strategies, minimizing the use of synthetic inputs, and reducing the environmental footprint of mushroom cultivation.
- **Increased Commercial Viability:** By improving cultivation techniques, optimizing production processes, and developing marketable products, the profitability and competitiveness of mushroom farming can be enhanced. This benefits farmers, entrepreneurs, and the overall mushroom industry.
- **Training and Education Opportunities:** Studying mushroom cultivation creates opportunities for training programs, workshops, and educational resources.

  
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## COURSE STRUCTURE

**DURATION** : 30 Hrs

**ASSESSMENT & CERTIFICATION** : The trainee will be tested for his skill, knowledge and attitude during the period of training and at the end of the training programme including practical examinations.

  
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# MUSHROOM CULTIVATION

## SYLLABUS

(Total 30 hrs)

### MODULE-I (10 hrs)

- History and introduction of Edible and Poisonous mushrooms.
- Common Indian mushrooms.
- Systematic position, morphology, distribution, structure of *Agaricus* and *Pleurotus*.

### MODULE- II (5 hrs)

- Nutritional value, medicinal value and advantages- types- milky, straw, button and poisonous mushrooms
- Production level, economic return, Foreign exchange from Mushroom cultivating countries and international trade.


### MODULE- III (10 hrs)

- Cultivation of Paddy straw mushroom, Oyster mushroom, white button mushroom and milky mushrooms
- Spawn making, Substrate preparation, Maintenance and Harvesting
- Composting

### MODULE- IV (5 hrs)

- Diseases- Common pests, disease prevention and control measures- *Agaricus*, *Pleurotus* and *Volverilla*.
- Processing and storage of mushrooms

**Field Study: Visit to a mushroom cultivating Laboratory and handson training for processing.**

  
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# MAHATMA GANDHI COLLEGE

POST GRADUATE DEPARTMENT AND RESEARCH CENTRE OF BOTANY

THIRUVNANTHAPURAM

ADD ON COURSE –2021- 2022

## LIST OF STUDENTS-MUSHROOM CULTIVATION

SL.NO	NAME OF STUDENT	CLASS/ SEMESTER
1	JIJI NELSON S	II PG
2	NAVAMI ASOK A S	II PG
3	SAJILA A S	II PG
4	AKHILA A G	I PG
5	APARNA B	I PG
6	APARNA CHANDRAN J S	I PG
7	AISHWARYASP	III UG
8	AISWARYA.S	III UG
9	AMRITHAKRISHNAA.S	III UG
10	ANJANA.A.B	III UG
11	ARSHASA	III UG
12	ASHTAMY.B.S	III UG
13	DEVENDUB.S.	III UG
14	GAYATHRYM.S	III UG
15	JANCY.C.S	III UG
16	MOHAMMEDSHANS	III UG
17	NIKHILAA.A	III UG
18	POOJAAJITH	III UG
19	SANGEETHASR	III UG
20	SIMLM.S	III UG
21	RESHMA BAIJU	III UG
22	AROMALKRISHNA.R.S	II UG
23	HARISARANSJ	II UG
24	SASWATHY	II UG
25	SARANGISSUNIL	II UG
26	SOURAVS	II UG
27	SREEJYOTHI.B.S	II UG
28	ARCHASANIL	II UG

29	MOSESMATHEW	II UG
30	SAILEKSHMI.V.S	II UG
31	NAUSHINA.J	II UG
32	ANANDHU A S	II UG
33	AKASH V	II UG
34	GOURI L AJI	II UG
35	SARANYA V S	II UG
36	SHILPA ANIL	II UG
37	AADHYAKV	I UG
38	AISWARYAM S	I UG
39	AKSHAYNP	I UG
40	AKSHAYA.A. M	I UG
41	AMALA	I UG
42	ANANDUKRISHNA.P	I UG
43	ANANTHUA	I UG
44	ARCHAS	I UG
45	AVANI.V.T	I UG
46	DEVIPRAKASH	I UG
47	DEVIKAD	I UG
48	DHANUSH.I.S	I UG
49	GOPIKASM	I UG
50	MUHSINANS	I UG

  
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PRINCIPAL

  
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# MAHATMA GANDHI COLLEGE

THIRUVANANTHAPURAM

POST GRADUATE DEPARTMENT & RESEARCH CENTRE OF BOTANY

## ADD ON COURSE- MUSHROOM CULTIVATION

### QUESTION PAPER

2021-2022 Academic year

Duration: 1 hr

Marks: 30

#### PART A - (Answer all 5; 1 marks each = 5 marks)

1. Define "composting" in the context of mushroom cultivation.
2. Name one common pest associated with mushroom cultivation.
3. Which mushroom type has significant medicinal values?
4. What is the systematic position of Agaricus?
5. Why is substrate preparation vital in mushroom cultivation?

#### PART B - (Answer any 5; 2 marks each = 10 marks)

6. Mention two common pests found in mushroom cultivation.
7. Explain the significance of mushroom storage.
8. Discuss the challenges and opportunities associated with mushroom cultivation in the modern age.
9. Briefly explain the historical significance of mushrooms in culinary and medicinal uses.
10. Describe the difference between edible and poisonous mushrooms.
11. Explain the nutritional benefits of consuming mushrooms.
12. Why is mushroom cultivation considered economically beneficial for farmers?

#### PART C - (Answer any 3; 5 marks each = 15 marks)

13. Provide a detailed account of the systematic position, distribution, and structure of Pleurotus.
14. Discuss the various types of mushrooms mentioned in the module and their unique characteristics.
15. Elaborate on the importance of substrate preparation and its role in ensuring a successful mushroom yield.
16. Describe the challenges associated with composting in mushroom cultivation.
17. What are the common diseases found in Pleurotus, and how can they be prevented?



Principal  
Mahatma Gandhi College  
Thiruvananthapuram



# MAHATMA GANDHI COLLEGE

## POST GRADUATE DEPARTMENT AND RESEARCH CENTRE OF BOTANY

### THIRUVNANTHAPURAM

ADD ON COURSE – 2021 - 2022

#### MARK LIST OF STUDENTS - MUSHROOM CULTIVATION

SL.NO	NAME OF STUDENT	CLASS/ SEMESTER	MARK	SIGNATURE
1	JJI NELSON S	II PG	28	JJI
2	NAVAMI ASOK A S	II PG	21	Navami
3	SAJILA A S	II PG	23	Sajila
4	AKHILA A G	I PG	20	Akhila
5	APARNA B	I PG	19	Aparna B
6	APARNA CHANDRAN J S	I PG	24	Aparna
7	AISHWARYA S P	III UG	26	Aishwarya
8	AISWARYA .S	III UG	29	Aishwarya
9	AMRITHA KRISHNA A.S	III UG	08	Amritha
10	ANJANA. A. B	III UG	22	Anjana
11	ARSHA S A	III UG	26	Arsha
12	ASHTAMY.B.S	III UG	29	Ashtamy
13	DEVENDU B.S.	III UG	06	Devendu
14	GAYATHRY M. S	III UG	22	Gayathry
15	JANCY.C.S	III UG	26	Jancy
16	MOHAMMED SHAN S	III UG	28	Mohammed
17	NIKHILAA. A	III UG	23	Nikhila
18	POOJA AJITH	III UG	24	Pooja
19	SANGEETHA S R	III UG	20	Sangeetha
20	SIMI . M . S	III UG	08	Simi
21	RESHMA BAIJU	III UG	19	Reshma
22	AROMAL KRISHNA .R.S	II UG	21	Aromal
23	HARISARAN S J	II UG	26	Harisaran
24	S ASWATHY	II UG	24	Swathy
25	SARANGI S SUNIL	II UG	22	Sarangi
26	SOURAV S	II UG	06	Sourav
27	SREEJYOTHI. B. S	II UG	20	Sreejyothi
28	ARCHA S ANIL	II UG	19	Archa

29	MOSES MATHEW	II UG	26	Moses Mathew
30	SAILEKSHMI. V.S	II UG	28	Sailekshmi
31	NAUSHIN A.J	II UG	06	Naushin A.S
32	ANANDHU A S	II UG	22	Anandhu
33	AKASH V	II UG	24	Akash
34	GOURI L AJI	II UG	26	Gouri
35	SARANYA V S	II UG	05	Saranya
36	SHILPA ANIL	II UG	23	Shilpa Anil
37	AADHYA K V	I UG	24	Aadhya
38	AISWARYA M S	I UG	26	Aiswarya
39	AKSHAY N P	I UG	28	Akshay
40	AKSHAYA. A. M	I UG	20	Akshaya
41	AMAL A	I UG	21	Amal A
42	ANANDU KRISHNA. P	I UG	06	Anandu
43	ANANTHU A	I UG	22	Ananthu
44	ARCHA S	I UG	23	Archa
45	AVANI.V.T	I UG	26	Avani V.T
46	DEVI PRAKASH	I UG	28	Devi
47	DEVIKA D	I UG	20	Devika
48	DHANUSH.I.S	I UG	08	Dhanush
49	GOPIKA SM	I UG	06	Gopika
50	MUHSINA N S	I UG	23	Muhsina

  
HEAD OF THE DEPARTMENT

  
PRINCIPAL

  
Principal  
Mahatma Gandhi College  
Thiruvananthapuram

**Applied Micro – Economic Theory**

**Department of Economics**

**2021 – 22**



# Mahatma Gandhi College Thiruvananthapuram


## Department of Economics

**ADVANCED  
MICROECONOMIC  
THEORY AND ITS  
APPLICATIONS**

*Certificate Course*

**Duration  
60 hours**

**Faculty  
Ruthi S.  
Assistant Professor  
Dept. of Economics  
Mahatma Gandhi College, Tvpm**

  
PRINCIPAL  
Mahatma Gandhi College  
Thiruvananthapuram

**Commencing from  
01.06.2021**

Interested students may contact the  
Department

From

The HOD

Department of Economics

Mahatma Gandhi College, Tvpm.

31<sup>st</sup> March 2021

Thiruvananthapuram

To

The Principal

Mahatma Gandhi College, Tvpm.

[ Request for the approval of Add on course for the next academic year 2021-2022]

Sir/Ma'am,

The department is planning to offer an add on course during the academic year 2021-2022 under the title "**EC 31: Certificate course on Advanced Microeconomic Theory & its application**". Smt Sruthi S, Assistant Professor, Department of Economics, Mahatma Gandhi college will be the course coordinator as well as the instructor. We have planned for a 30 hr course via online mode. The targeted group is the Economics Graduate students. The details of the course are attached herewith.

Thanking You

Yours' sincerely

HoD



PRIYA L G  
Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram



## EC 31: Certificate course on Advanced Microeconomic Theory & its application

**Description of the course:**

This is a course designed for students who are pursuing a degree in economics and have already taken introductory courses in micro. While these courses provide the basic toolkit of economics along with the standard results deemed important for a solid education in economics, applied economic analysis will help students in using the economics toolkit to address questions that they are interested in asking or see outside their classrooms in the real world. Why do investment bankers make so much money? Why is Delhi so polluted? Why do we have dowry system in India? Why do fish vendors sell fish at a lower price at night? Even seemingly noneconomic questions like: Why do people apologize? Why there exist sex selective abortions? And do religious rituals help enforce social contracts. Students will be encouraged to work and refine research questions, critically read literature, collect data and develop analytic frameworks to extract insights from data.

**Course Material:** There are no prescribed textbooks for this course. But to get started with the course, please go through:

1) What use is Economic Theory, an essay by Dr. Hal Varian.

2) Trial, Error and the God complex, a talk by Tim Hartford on the importance of empirics.

You would also do well to get a copy/ebook of Applied Economics-thinking beyond stage one by Thomas Sowell. This book will give a primer on how to think like an economist (and not just take exams like one).

The course is not based on the book, but you will benefit greatly from insights that it provides.

**Further Information about the course:** The rest of the material will be provided through the course in the form of slides, readings, videos and data sets. The content of these will depend on the specific topics/questions/issues that will be taken up in the course (in consultation with you).

**Course Objectives**

At the end of the course successful students should be able to:

1. Reduce real life problems to questions that can be evaluated using the toolkit of economics.
2. Set up simple economic models.
3. Identify good data sources, collect data, and perform basic statistical and econometric analysis.
4. Develop a sense of the standard of evidence required to make a strong claim.


**Instructors and Hours (30 hrs)**


Instructor : Sruthi S, Assistant Professor, Department of Economics

Preferred Contact : [sruthi@mgcollegetvm.org](mailto:sruthi@mgcollegetvm.org)

**EC 31: Certificate course on Advanced Microeconomic Theory & its application**

Session plan Week	General Topic	Readings
1	<ul style="list-style-type: none"> <li>• Introduction: course goal and objectives</li> <li>• <b>Economics of Public Goods and Policies</b></li> <li>• The games are introduced                             <ul style="list-style-type: none"> <li>• Public goods provision game</li> </ul> </li> </ul>	C.O.R.E and Sydnester
2	<ul style="list-style-type: none"> <li>• <b>Economics of Markets and role of game theory in analysing real world situations</b></li> <li>• Introducing Game theory</li> <li>• Market Game</li> <li>• Prisoner's Dilemma</li> </ul>	C.O.R.E and Sydnester [Beautiful mind movie discussion is recommended]
3	<ul style="list-style-type: none"> <li>• <b>Economics of Markets and role of game theory in analysing real world situations.</b></li> <li>• Discussions on a real-world issue. Preferably a current local issue. (Graded)</li> </ul>	Hal. R Varian and C.O.R.E
4	<ul style="list-style-type: none"> <li>• Presentations and course overview.</li> <li>• Submission of end-term research paper.</li> </ul>	

  
 Head of the Department  
 PG Department of Economics  
 Mahatma Gandhi College  
 Thiruvananthapuram

  
 SRUTHI S  
 Assistant Professor  
 Department of Economics  
 Mahatma Gandhi College, TPVM



EC 31: Certificate course on Advanced Microeconomic Theory & its application

**Course Intended Learning Objectives**

(Aim) Course Intended Learning Outcomes	Teaching and Learning Activities	Assessment/Activities
Basic understanding of Microeconomics in analysing the real-world scenarios	Class lectures, Games and group discussion	<ul style="list-style-type: none"><li>• On line lecture</li><li>• One Term paper or Article</li><li>• One class presentation based on the research paper or any real world microeconomic issue.</li><li>• Class participation</li></ul>

**Scheme of Evaluation<sup>1</sup> and Grading**

Evaluation is comprised of continuous assessment, all of which will be **internal (100%)**. Internal evaluation is comprised of:

- **Classroom participation (10%)**
- **End-term research paper (65% for undergraduate-level and 50% for graduate-level):**  
The article or the term paper should have a maximum of 2 to 3 pages. The paper should include the following components:

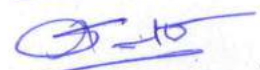
1. Introduction/background: Present your research topic.
  2. Relevant pictures should be included
  3. The microeconomic concept given in the class should be explained with proper justification
- [ No two papers should address the same issue]

**Academic Integrity:**

**Academic Honesty, Cheating, and Plagiarism:** As per University policy.

**Attendance Policy:** As per University policy

Faculty



**SRUTHI S**  
Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM



**PRINCIPAL**  
Mahatma Gandhi College  
Thiruvananthapuram

HOD




**PRIYA L G**  
Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram

**2021-22****Certificate course on Advanced Microeconomic  
Theory & its applications**

Faculty:	SRUTHI S
Start Date:	1st June 2021
End Date:	5th July 2021
Hours:	30 hours
No of Days	10 days
Total no of reg students:	53
Time:	4 pm to 7 pm
Mode	Online via G-Meet

**STUDENT LIST**

sl no	Register number	Name
1	15020118001	ABHIJAYA V NAIR
2	15020118002	ABHIJITH M.S
3	15020118003	ADHITHYA K A
4	15020118004	AKASH R M
5	15020118006	AMITHA . A . J
6	15020118008	ANJANA V
7	15020118010	ANUJA.A.J
8	15020118011	ARATHY CHANDRAN V B
9	15020118013	DEVIKA Y S
10	15020118014	LEKSHMI S
11	15020118015	MEKHA S
12	15020118016	NANDANA A S
13	15020118017	NIVA A S
14	15020118018	RADHIKA R.S
15	15020118022	VISHNU. M
16	15020118023	ABHIJAY R
17	15020118024	ABHINAND S A
18	15020118025	ABHINAV KRISHNA D P
19	15020118026	ADHITHYA SANKAR A A
20	15020118027	AISWARYA V S
21	15020118028	AJESH A I
22	15020118029	AKASH B MANOHAR
23	15020118030	AKHIL S
24	15020118031	AMITHRAJITH.S.S
25	15020118032	ANANDU. A.S
26	15020118033	ARATHI B S
27	15020118035	ARAVIND A S
28	15020118036	ARDRA B S
29	15020118037	ASHTAMI A.S
30	15020118038	ATHIRA .S
31	15020118039	BHAGYA S

  
SRUTHI S  
Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TPVM

32	15020118040	BHAVYA J.S
33	15020118041	BIMAL S S
34	15020118042	DEVIKA R.H
35	15020118043	GANGA P K
36	15020118044	GAUTHAM. B. CHAND
37	15020118045	GAYATHRI S A
38	15020118046	GOKUL A
39	15020118047	GOWRI M R
40	15020118048	KARTHIKA P. NAIR
41	15020118049	LAKSHMI SURESH
42	15020118050	MALAVIKA. A.S
43	15020118051	MEGHA.S.KRISHNAN
44	15020118052	NIKHIL P SYAM
45	15020118053	PRANAY PRASANTH
46	15020118055	RESHMA R.G
47	15020118059	SANDRA A S
48	15020118062	SHINI M.S
49	15020118065	SREELEKSHMI V S
50	15020118069	ARUNKRISHNAN U V
51	15020118070	GOURI G P
52	15020118073	THIRTHA K
53	15020118075	GOWTHAMLAL



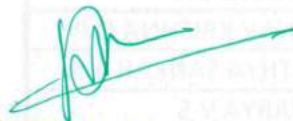
**SRUTHI S**

Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM



**PRIYA L G**

Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram



**PRINCIPAL**  
Mahatma Gandhi College  
Thiruvananthapuram

## Outline for the Term paper.

Due July 5th

A **social dilemma** is a collective action situation in which there is a conflict between individual and collective interest. Usually has two properties:


A. each individual receives a higher payoff for a socially defecting choice ... than for a socially cooperative choice, no matter what the other individuals do, but


B. all individuals are all better off if all cooperate than if all defect.


More technically, it is a collective action situation in which the Nash equilibrium results in outcomes below the Pareto optimal.

Pareto Optimal: an outcome is Pareto optimal if there is no alternative outcome that makes some individuals better off and leaves all other individuals at least as well off.

What is the Pareto optimal choice? What is the Nash equilibrium? Your work: Identify a social dilemma in your everyday life. Construct a simple model with special emphasis on how you derive the payoffs. Talk about the complexities that your model misses out on. Think of a 'social/cultural' mechanism that can help alleviate the dilemma. Either find examples of such mechanisms out in the world, or explain how will you go about setting up such a mechanism. Then address these questions: Will this be a fool proof mechanism? Will it always work? Will it create other problems that need to be solved?

  
15/6/21  
SRUTHI S  
Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM

  
PRIYA LG  
Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram

  
PRINCIPAL  
Mahatma Gandhi College  
Thiruvananthapuram

2021-22

## Certificate course on Advanced Microeconomic Theory &amp; its applications

Faculty: SRUTHI S  
 Start Date: 1st June 2021  
 End Date: 5th July 2021  
 Hours: 30 hours  
 No of Days: 10 days  
 Total no of reg students: 53  
 Time: 4 pm to 7 pm  
 Mode: Online via G-Meet

[max marks-20]


sl no	Register number	Name	Class Performance	Term Paper	Total Grade	
1	15020118001	ABHIJAYA V NAIR	A	19	A+	ABD
2	15020118002	ABHIJITH M.S	C	18	A	Abhijith
3	15020118003	ADHITHYA K A	B	18	A	Adhithya
4	15020118004	AKASH R M	C	17	B	AKASH
5	15020118006	AMITHA . A . J	B	17	B	Amitha AJ
6	15020118008	ANJANA V	C	17	C	Anjana
7	15020118010	ANUJA.A.J	B	18	A	Anuja
8	15020118011	ARATHY CHANDRAN V B	C	18	A	Arathy
9	15020118013	DEVIKA Y S	A	18.5	A+	Devika
10	15020118014	LEKSHMI S	B	18	A	Lekshmi
11	15020118015	MEKHA S	B	19	A+	Mekha
12	15020118016	NANDANA A S	A	18	A	Nandana
13	15020118017	NIVA A S	B	17	B	Niva
14	15020118018	RADHIKA R.S	C	17	B	Radhika
15	15020118022	VISHNU. M	C	17	C	Vishnu
16	15020118023	ABHIJAY R	C	17	C	Abhijay
17	15020118024	ABHINAND S A	C	17	C	Abhinand
18	15020118025	ABHINAV KRISHNA D P	A	19	A+	Abhinav
19	15020118026	ADHITHYA SANKAR A A	A	18	A	Adhithya
20	15020118027	AISWARYA V S	A	18	A	Aiswarya VS
21	15020118028	AJESH A I	A	18	A	Ajesh
22	15020118029	AKASH B MANOHAR	A	18	A	Akash
23	15020118030	AKHIL S	B	17	B	Akhil
24	15020118031	AMITHRAJITH.S.S	B	17	B	Amithrajith
25	15020118032	ANANDU. A.S	C	17	C	Anandu
26	15020118033	ARATHI B S	B	17	B	Arathi
27	15020118035	ARAVIND A S	B	18	A	Aravind
28	15020118036	ARDRA B S	A	18	A	Ardra
29	15020118037	ASHTAMI A.S	B	18	A	Ashtami
30	15020118038	ATHIRA .S	B	18	A	Athira
31	15020118039	BHAGYA S	A	18	A	Bhagya


32	15020118040	BHAVYA J.S	C	17	C	Bhavya
33	15020118041	BIMAL S S	C	17	C	Bimal
34	15020118042	DEVIKA R.H	C	17	C	Devika
35	15020118043	GANGA P K	A	19	A+	Ganga
36	15020118044	GAUTHAM. B. CHAND	B	18	A	Gautham
37	15020118045	GAYATHRI S A	B	18	A	Gayathri
38	15020118046	GOKUL A	A	18	A	Gokul
39	15020118047	GOWRI M R	A	18	A	Gowri
40	15020118048	KARTHIKA P. NAIR	A	19	A+	Kartika
41	15020118049	LAKSHMI SURESH	C	19	A+	Lakshmi
42	15020118050	MALAVIKA. A.S	B	17	B	Malavika
43	15020118051	MEGHA.S.KRISHNAN	B	18	A	Megha
44	15020118052	NIKHIL P SYAM	A	18	A	Nikhil
45	15020118053	PRANAY PRASANTH	C	17	C	Pranay
46	15020118055	RESHMA R.G	B	18	B	Reshma
47	15020118059	SANDRA A S	B	18	A	Sandra
48	15020118062	SHINI M.S	C	17	C	Shini
49	15020118065	SREELEKSHMI V S	A	19	A+	Sreelekshmi
50	15020118069	ARUNKRISHNAN U V	B	18	B	Arunkrishnan
51	15020118070	GOURI G P	B	18	B	Gouri
52	15020118073	THIRTA K	A	19	A+	Thirtha
53	15020118075	GOWTHAMLAL	A	18	B	Gowthamlal

Grades :- A+ - 95 above  
A - 90 to 95  
B - 85 to 90  
C - 80 to 85

Term paper marks on 20

  
**SRUTHI S**  
Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM

  
P. PRAVEEN  
Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram

  
**PRINCIPAL**  
Mahatma Gandhi College  
Thiruvananthapuram

# REPORT

## EC 31: Certificate course on Advanced Microeconomic Theory & its application

The course started on 1<sup>st</sup> of June 2021. It was scheduled as a 30 hrs, 10 days course with 3 hr sessions on each day. The course aimed at bridging the gap between the regular classroom course and the world outside. To help students in their process of thinking like an Economist was the main objective. 53 undergraduate students participated in the course. The classroom participation was very good. The students after few sessions of the class started connecting the dots and were able to point out the economics behind many real-world scenarios in their daily life.

Existence of dowry in our society and the economics behind was the topic chosen for classroom interaction. Many students expressed their views and insights. Why is Delhi so polluted? Why do we have dowry system in India? Why do fish vendors sell fish at a lower price at night? Even seemingly noneconomic questions like: Why do people apologize? Why there exist sex selective abortions? And do religious rituals help enforce social contracts. Were the other set of problems that were discussed as part of the course.

There were 53 students and hence the group were able to identify 53 different topics of current relevance. The students were encouraged to think outside the box and go local in addressing the social dilemma problems.



**SRUTHI S**  
Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM



Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram



PRINCIPAL  
Mahatma Gandhi College  
Thiruvananthapuram

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Mahatma Gandhi College  
Thiruvananthapuram

**Data Analysis using GRET**

**Department of Economics**

**2021 – 22**





# Mahatma Gandhi College Thiruvananthapuram

## Department of Economics

### *Certificate Course*

*on*

### **DATA ANALYSIS USING GRET**

**Faculty**

**Sruthi S.**

**Assistant Professor**

**Dept. of Economics**

**MG College, Tvpm**

**Course Duration**

**30 hours**

**PRINCIPAL**  
Mahatma Gandhi College  
Thiruvananthapuram

**Starting from**

**15.07.2021**

**Interested students may contact the department**

From

The HOD

Department of Economics

Mahatma Gandhi College, Tvpm.

To

The Principal

Mahatma Gandhi College, Tvpm.

[ Request for the approval of Add on course for the academic year 2021-2022]

Sir/Ma'am,

The department is planning to offer an add on course during the academic year 2021-2022 under the title "**EC 32 Data Analysis using GRETl**". Smt Sruthi S, Assistant Professor, Department of Economics, Mahatma Gandhi college will be the course coordinator as well as the instructor. We have planned for a 30 hr course via online. The targeted group is the Economics Graduate students. The details of the course are attached herewith.

Thanking You

Yours' sincerely

HoD



## **EC 32: Data Analysis Using GRETL**

Academic Year 2021-22  
Mahatma Gandhi College  
Thiruvananthapuram


---

2021-22


Data analysis using GRETL

Faculty:	SRUTHI S	
Start Date:	15th July 2021	
End Date:	28th September 2021	
Hours:	32 hours	
No of Days	27 days	
Total no of reg students:	30	
STUDENTS LIST		
sl no	Register number	Name
1	55020118001	AISWARYA A S
2	55020118002	ALFI S
3	55020118003	ARUNIMA. P
4	55020118004	GAYATHRI S
5	55020118005	GOURI V NAIR
6	55020118006	KRISHNA. K. P
7	55020118007	LEENA GEORGE
8	55020118008	PARVATHY A S
9	55020118010	R.S.MALAVIKA
10	55020118011	RESHMA MOHAN
11	55020118012	REVATHY U S
12	55020118014	SNIGDHA S
13	55020118015	SURYA PRAKASH
14	55020118016	VIGNESH M S
15	55020118017	VISHNU VARDHAN M S
16	55021118002	ADITHYA S PILLAI
17	55021118003	AISWARYA J R
18	55021118004	AKHILA G K
19	55021118005	ANJANA M
20	55021118006	ARJUN J B
21	55021118007	KARTHIKA S
22	55021118008	KRISHNA MURALEEDHARAN
23	55021118009	KRISHNA PRIYA V V
24	55021118010	LAVANYA.S. A
25	55021118011	LIJIMOL.L. A
26	55021118012	M M SREELAKSHMI
27	55021118013	S MEGHA NAIR
28	55021118015	SOUFIYA BADAR
29	55021118016	SWATHY S KUMAR
30	55021118017	VARSHA B M

Faculty in charge

  
SRUTHI S

Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM

  
PRINCIPAL  
Mahatma Gandhi College  
Thiruvananthapuram

  
PRITYA L.G.

Head of the Department  
PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram

**Readings**

- Required Textbook: Wooldridge, J. M. (2009). Introductory Econometrics: A modern approach, 6th edition, Cengage Learning, India. [JW]
- Stock, J. H. & Watson, M. W. (2019). Introduction to Econometrics, 4th edition, Pearson [SW].
- Damodar N Gujarati and Dawn C Porter (2009): Basic Econometrics, Fifth Edition, McGraw Hill International Edition. [GJ]
- Damodar N Gujarati (2011): Econometrics by Example, First Edition, Palgrave, MacMillan.[GJX]
- AH Studenmund: Using Econometrics: A Practical Guide, Fifth Edition, Pearson Education [SM]

**Assessment**

Evaluation will be 50% (internal lab exam in GRETL), 40% (Internal Written Exam: MCQ) and 10% for attendance and class participation.

**Assessments:**

You will have several assessments throughout the course. The classes will include lecture, lab sessions and the assessment will also be done continuously based on your performance in understanding the software and also your efficiency in understanding various econometric problems using GRETL.

**Exams:** There will be no assignment for the course. There will be a final exam (40% of your grade). The final exam will be held according to university schedule.

**Academic Integrity:** Academic Honesty, Cheating, and Plagiarism as per university policy.

**Attendance Policy:** As per University policy for any other regular course degree course.

**Course Contents****Syllabus**

30 Hrs

**Module I: Simple Linear & Multiple Regression Model**

10 Hrs

Introduction to Econometrics -The concept of PRF & SRF -Significance of stochastic error term-  
Method of ordinary least squares- Assumptions underlying the method of least squares-  
Properties of estimators- Gauss Markov Theorem-Coefficient of determination,  $r^2$  -  
Hypothesis testing- t and F tests-P value- Practical versus statistical significance-Prediction-

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PG Department of Economics  
Mahatma Gandhi College  
Thiruvananthapuram

Assistant Professor  
Department of Economics  
Mahatma Gandhi College, TVPM

Multiple coefficients of determination  $R^2$  and adjusted  $R^2$ -Hypothesis testing-Testing the overall significance of the regression model-F test

**Module II: Econometric Problems and their testing**

10 Hrs

Multicollinearity- Nature, consequences, detection and remedial measures-Autocorrelation- Nature, consequences, detection, and remedial measures- Heteroskedasticity-Nature, consequences, detection and remedial measures.

**Module III: Dummy Variable Regression Model**

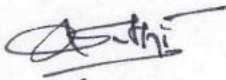
10 Hrs

Dummy variable-ANOVA models-ANCOVA models-Dummy variable trap-Dummy variables and seasonal analysis-Structural analysis-Piecewise linear regression.


**Important:** This syllabus is intended to give the student guidance in what may be covered during the semester and will be followed as closely as possible. However, the instructor reserves the right to modify, supplement and make changes as the course needs arise.

- Multiple Regression Analysis: Further Issues  
JW: Chapter 6
- Multiple Regression Analysis with Qualitative Information  
JW: Chapter 7 and SW: Chapter 11
- Heteroskedasticity


Prepared by



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**PRIMA LG**  
Head of the Department  
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Department of Economics  
Mahatma Gandhi College, Tvpm

Data analysis using GRETL  
(EC 32)

September 15<sup>th</sup> 2021

NAME:

SECTION:

[Question paper with answer key]

*Instructions: Calculators are allowed.*

*Total Marks: 20 points.*

1. [1 point] In the equation  $y = \theta_0 + \theta_1 x + u$ ,  $\theta_0$  is the \_\_\_\_\_.
  - (a) dependent variable
  - (b) independent variable
  - (c) slope parameter
  - (d) intercept parameter**
2. [1 point] If an independent variable in a multiple linear regression model is an exact linear combination of other independent variables, the model suffers from the problem of \_\_\_\_\_.
  - (a) perfect collinearity**
  - (b) homoskedasticity

- (c) the independent variables have no exact linear relationships among them
- (d) the regression model relies on the method of random sampling for collection of data
5. [1 point] A model suffers from the problem of endogeneity if
- (a) OLS estimators are not predicted precisely.
- (b) The unobservables do not have constant variance.
- (c) **Zero conditional mean assumption does not hold.**
- (d) When  $x_j$  is uncorrelated with  $u$
6. [1 point] True or False: The estimate  $\hat{\sigma}$  is interesting because it is an estimate of the standard deviation of the unobservables affecting  $y$ . In other words, it estimates the standard deviation in  $y$  after the effect of  $x$  has been taken out and is called the standard error (s.e.). **True**
7. [1 point] True or False: The term "linear" in a multiple linear regression model means that the equation is linear in the independent variables. **False**
8. [1 point] True or False: The regression model,  $ceosalary = \hat{\alpha}_0 + \hat{\alpha}_1 ceoten + \hat{\alpha}_2 ceoten^2 + \hat{\alpha}_3 gender$  violates the assumption MLR.3. **False**
9. [1 point] True or False: Overspecifying a model that satisfies MLR. 1. through MLR. 4. has undesirable effects on the unbiasedness and efficiency of OLS estimators. **False**
10. [1 point] True or False: MLR. 3. rules out certain relationships between explanatory variables and MLR. 4. rules out relationships between unobservables and regressors. **True**
11. [2 points] True or False: Larger the sampling variance in  $x$  in an SLR model, larger the sampling variance for OLS estimators. **False**
12. [2 points] CEO salary and return on equity regression model looks like the following

$$salary = 963.191 + 18.501roe$$

$$n = 209, R^2 = 0.0132$$

The percentage of salary variations for CEO's salary left unexplained by  $roe$  is

- (a) 13.2%
- (b) 1.32%
- (c) 98.68%
- (d) 18.501% **Ans: C**
13. Using data on 5000 college students, the following equation was estimated by OLS

$$colGPA = 1.467 - 0.0128hsperc + 0.00192sat$$

$$n = 5000 \quad R^2 = 0.23.4$$



where  $colGPA$  is measured on a 4-point scale,  $hsperc$  is the percentile in the high school graduating class (defined so that, for example,  $hsperc = 5$  means the top 5% of the class), and  $sat$  is the combined math and verbal scores on the student achievement test.

(a) [2 points] The predicted college GPA when  $hsperc = 20$  and  $sat = 1,050$  is:

i. 2.676

ii. 3.227

iii. 2.978

iv. 3.576 **Ans: ii**

(b) [2 points] Suppose that two high school graduates, A and B, graduated in the same percentile from high school, but Student A's SAT score was 140 points higher (about one standard deviation in the sample). What is the predicted difference in college GPA for these two students?

i. 0.2688

ii. 1.0934

iii. 0.3012

iv. 0.2072 **Ans: i**

(c) [2 points] Holding  $hsperc$  fixed, what approximate difference in SAT scores leads to a predicted  $colgpa$  difference of .50, or one-half of a grade point?

i. 338

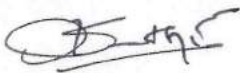
ii. 200

iii. 220

iv. 260 **Ans: iv**

graduates, A and B, graduated in the same percentile from high school, but Student A's SAT score was 140 points higher (about one standard deviation in the sample). What is the predicted difference in college GPA for these two students?

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Verified by



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PG Department of Economics  
Mahatma Gandhi College  
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**PRINCIPAL**  
Mahatma Gandhi College  
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# REPORT

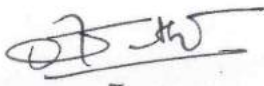
## EC 32: Data Analysis Using GRETL

This is a course designed for final year undergraduate B A Economics or any M.A Economics student who has done a basic course in Econometrics in their undergraduate programme. Only PG students registered for the course. The course is designed to extend students' knowledge of basic econometric concepts and techniques learnt in Econometrics.

GRETL is a powerful free statistical software that allows us numerous ways to analyse, manipulate and present data. This course is designed to provide an introduction to this software, which can perform both basic as well as advanced statistical analyses. It is **not** intended to explain you the statistical and/or econometric methods. Students will be introduced to some basic features of GRETL (e.g., learning how to do data analysis using econometric tools) leading to efficient data management skills.

Due to the lack of availability of laptops students attended the online classes and used the nearby Akshaya centres and took help from their neighbourhood to access GRETL. The COVID-19 restrictions did affect the delivery of the course but within these limitations the course was of benefit to students especially during their project work. Final exam was conducted offline at the campus and was an MCQ type exam. At that time lab exam was also conducted and evaluated in the campus itself. Most of the students did very well as very basic econometric analysis were only asked for. The course intends to equip students to apply statistical and econometric analysis in their project works.

The students suggested for more lab hours and the department rectified that in the upcoming courses. Further the department has decided to bring in more U G students as well for the course next year.



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**English for Career**  
**Department of English**  
**2021 – 22**

## Notice

The P.G department of English is planning to conduct an Add on course **English for career** from August 2022 onwards. Students who are interested please contact the course co-ordinators Vani Jyothi and Aparna .R. Menon, Dept of English.

  
Principal  
Mahatma Gandhi College  
Thiruvananthapuram

  
**Dr. VIDYA RAJAGOPAL**  
Associate Professor and Head  
P.G. Dept. of English  
Mahatma Gandhi College  
Research Guide, University of Kerala  
Thiruvananthapuram



**MAHATMA GANDHI COLLEGE, TRIVANDRUM**  
**DEPARTMENT OF ENGLISH**

**ADD ON COURSE ON**  
**ENGLISH FOR CAREER**

**COURSE DURATION: 30 HOURS.**  
**From August 2022 onwards**

**Interested students please contact Department of English**

# SYLLABUS

ADD- ON COURSE: ENGLISH FOR CAREER

No. of instructional hours per week: 2.5 (Total :30 hours)

## Module 1

Phonetics and Phonology

Elements of Phonology- pitch, intonation, stress, accent

## Module 2

Listening and Speaking Skills

Building up interpersonal skills- confidence building measures through speaking exercises- Interview skills- Grammar for effective speaking

## Module 3

Business Writing

Reports, CVs and resumes, letters, job applications, memos, notices, minutes-

Grammar for effective writing

## Module 4

Corporate communication

Roleplay, Presentation, Group Discussion- Body language

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**DEPARTMENT OF ENGLISH**  
**MAHATMA GANDHI COLLEGE**  
**THIRUVANANTHAPURAM**  
**ADD-ON COURSE ENROLMENT LIST (2022-23)**

The following students of UG 2021-23 batch enrolled for the Add-on Course  
(English for Career) offered by the Department of English.

Sl No.	Candidate code	Name	signature
1	23021118001	AARDRA A.S.	
2	23021118002	ABHAY A.S.	
3	23021118005	AKHIL PRADEEP	
4	23021118007	AMBADI SURESH S.S.	
5	23021118008	ANAND S.	
6	23021118009	ARCHA M.S..	
7	23021118014	GADHA M. LEKSHMY	
8	23021118015	GOURI R.	
9	23021118016	JISHA L.	
10	23021118018	MEENAKSHI A.M.	
11	23021118019	PARTHAN A.S.	
12	23021118020	PARVATHY PRATHAP	
13	23021118022	SAJIN R.	
14	23021118024	SNEHA A.	
15	11521118004	ABHISHEK J.S.	
16	11521118007	AJIL KRISHNAN G.	
17	11521118017	ARYA A.S.	
18	11521118018	ARYA J.	
19	11521118022	DEVANAND S.R	
20	22021118001	ADWAITH J.S.	
21	22021118002	AKHIL S.S.	
22	22021118004	AMRUTHENDU M.	
23	22021118006	ARATHY R.	
24	22021118007	ARSHA PRASAD	
25	22021118011	HARIKRISHNAN D.	



26	22021118012	NANDANA MUKUNDAN	<i>Nandana</i>
27	22021118014	NEETHU S.	<i>Neethu</i>
28	22021118018	SARAN PRASAD	<i>Saran</i>
29	22021118021	VISHNU V.S	<i>Vishnu</i>
30	15921118001	ABHIMA T.	<i>Abhima</i>
31	15921118002	ADITH B.A	<i>Adith</i>
32	15921118006	AROMAL S.	<i>Aromal</i>
33	15921118007	ASWIN UNNI	<i>Aswin</i>
34	15921118008	AVANI ANIL	<i>Krishna</i>
35	15921118010	KRISHNAPRIYA R.R.	<i>Krishna</i>
36	15921118011	NANDHANA SAJEEV	<i>Nandhana</i>
37	15921118013	NANDIKA M.S.	<i>Nandika</i>
38	15921118014	PARVATHY KRISHNA S.S.	<i>Parvathy</i>
39	15921118015	PRANAV S.	<i>Pranav</i>
40	15921118016	PRANAV P.	<i>Pranav</i>
41	15921118019	SOORYA S. NAIR	<i>Soorya</i>
42	15921118020	VYSHNAVI D.	<i>Vyshnavi</i>
43	15921118022	ABHIRAM S.	<i>Abhiram</i>
44	15921118023	ACHUTH BALAKRISHNAN	<i>Achuth</i>
45	25021118001	ADITHYAN R.	<i>Adithyan</i>
46	25021118002	AMRITHA U.R	<i>Amritha</i>
47	25021118005	HARISREE A.S. NAIR	<i>Harisree</i>
48	25021118013	ATHUL SURESH	<i>Athul</i>
49	25021118014	DEVIKA A.V	<i>Devika</i>
50	25021118019	NANDANA S.A	<i>Nandana</i>
51	25021118022	NAVAMI N.S.	<i>Navami</i>
52	13021118009	KRISHNA SAURABH S.G.	<i>Krishna</i>
53	13021118019	ALBIN SANTHOSH	<i>Albin</i>
54	13021118003	ANAMIKA D.P	<i>Anamika</i>
55	13021118005	DEVU A.S	<i>Devu</i>
56	13021118014	NEHA V.S	<i>Neha</i>
57	13021118033	JOSHNA JOHNSON	<i>Joshna</i>
58	13021118021	ANANTHARAMAN D.P	<i>Anantharaman</i>
59	13021118001	ABHISHA U.R	<i>Abhisha</i>
60	13021118039	SWATHY P.S	<i>Swathy</i>
61	13021118010	MEGHA VINAYAN	<i>Megha</i>



**Mahatma Gandhi College, Thiruvananthapuram**  
**ADD-ON COURSE: ENGLISH FOR CAREER**

Max marks : 25

I. Answer **all** questions.

1. Mark the stress of the following words:  
a. examination b. photo c. teacher d. musician e. college
2. Prepare the minutes of a shareholders' meeting in a company.
3. Which are the consonant sounds in English? Give an example each.

(3x5 = 15 marks)

II. Answer the following :

4. Prepare a cover letter and resume for applying for the post of Executive Chef in a reputed restaurant.

(1x 10= 10 marks)

MAHATMA GANDHI COLLEGE  
DEPARTMENT OF ENGLISH  
ADD-ON COURSE (2021-22): **ENGLISH FOR CAREER**  
MARKLIST

Sl No.	Candidate code	Name	Marks (out of 25)
1	23021118001	AARDRA A.S.	23
2	23021118002	ABHAY A.S.	23
3	23021118005	AKHIL PRADEEP	20
4	23021118007	AMBADI SURESH S.S.	23
5	23021118008	ANAND S.	22
6	23021118009	ARCHA M.S..	23
7	23021118014	GADHA M. LEKSHMY	22
8	23021118015	GOURI R.	23
9	23021118016	JISHA L.	23
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22	22021118004	AMRUTHENDU M.	21
23	22021118006	ARATHY R.	20
24	22021118007	ARSHA PRASAD	23
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27	22021118014	NEETHU S.	23
28	22021118018	SARAN PRASAD	23
29	22021118021	VISHNU V.S	23
30	15921118001	ABHIMA T.	22
31	15921118002	ADITH B.A	23
32	15921118006	AROMAL.S.	23
33	15921118007	ASWIN UNNI	22

MAHATMA GANDHI COLLEGE  
DEPARTMENT OF ENGLISH  
ADD-ON COURSE (2021-22): **ENGLISH FOR CAREER**  
MARKLIST

34	15921118008	AVANI ANIL	22
35	15921118010	KRISHNAPRIYA R.R.	21
36	15921118011	NANDHANA SAJEEV	22
37	15921118013	NANDIKA M.S.	23
38	15921118014	PARVATHY KRISHNA S.S.	22
39	15921118015	PRANAV S.	22
40	15921118016	PRANAV P.	23
41	15921118019	SOORYA S. NAIR	23
42	15921118020	VYSHNAVI D.	22
43	15921118022	ABHIRAM S.	22
44	15921118023	ACHUTH BALAKRISHNAN	23
45	25021118001	ADITHYAN R.	23
46	25021118002	AMRITHA U.R	22
47	25021118005	HARISREE A.S. NAIR	21
48	25021118013	ATHUL SURESH	22
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50	25021118019	NANDANA S.A	22
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52	13021118009	KRISHNA SAURABH S.G.	23
53	13021118019	ALBIN SANTHOSH	23
54	13021118003	ANAMIKA D.P	22
55	13021118005	DEVU A.S	23
56	13021118014	NEHA V.S	22
57	13021118033	JOSHNA JOHNSON	23
58	13021118021	ANANTHARAMAN D.P	23
59	13021118001	ABHISHA U.R	22
60	13021118039	SWATHY P.S	21
61	13021118010	MEGHA VINAYAN	21
62	13021118006	GAYATHRI CHANDRAN J.S	23
63	13021118004	ARYA NAIR	23
64	13021118012	NANDANA A.R	23
65	13021118013	NANDANA BABU H.	23
66	13021118028	SAFALYA S.	22
67	13021118037	SIDDHI SANTHOSH	22
68	13021118031	SYAMA S.S	22



## **Add-on Course(2021-22): ENGLISH FOR CAREER REPORT**

The Add-on course offered by the Department of English, Mahatma Gandhi College titled, English for Career, was formally inaugurated on 12 August 2022. Principal, Dr V.M.Anandakumar presided over the function. Dr Chitra V.S, HoD in-charge delivered the welcome address. The inaugural session was handled by Sri Renjith Babu (Senior IELTS Trainer, Santamonica Pvt Ltd, on the topic 'English Language for Self Evolution'.

70 students from our various UG programmes enrolled for the course. The classes were conducted as 30 minute sessions, during zero hours on weekdays. The course focused on enhancing the language skills of students with special emphasis on career. Certificates were provided to the students on the successful completion of the course.

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**Principal**  
Mahatma Gandhi College  
Thiruvananthapuram



**Thiruvananthapuram, Kerala, India**

Unity Tower, 4th, Mahatma Gandhi College - Main Block, Sree Nagar,  
Kesavadasapuram, Thiruvananthapuram, Kerala 695004, India

Lat 8.531808°

Long 76.943299°

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**LATEX Programming**  
**Department of Mathematics**  
**2021 – 22**

Notice

Mahatma Gandhi College ,Thiruvananthapuram

Department of Mathematics

Starting an Add-on Course on

LaTex Programming

for the academic Year 2021-22

Interested students can join the Program

Contact —Dr K Radhakrishnan (9447018612)

  
Principal  
Mahatma Gandhi College  
Thiruvananthapuram

  
Ram Kumar.R  
HoD, Mathematics

**Mahatma Gandhi College, Thiruvananthapuram**  
**Department of Mathematics**

**Add-on Course on LATEX Programming**  
**(Course Code : MGMM01, Program Code : AD02)**  
**(2021-22)**

**Aim of the Course :** To make awareness of LATEX documentation program to PG students of various Science department of the college.

**Duration of the Course :** 30 Hours .

**Total Intake :** 18 Students

**Mode of Selection :** On merit basis (from the applicants)

**Syllabus**

**Module 1**

**Introduction to UNIX Commands**

Introduction to Linux Operating System, Basic UNIX commands – login, directory structure and commands, different file related commands, different file editors, related commands etc.

**Module 2**


**Introduction to LATEX**

Computer typesetting using LATEX, running LATEX, different fonts, alignments, setting tabs, underline, setting margins, different documentclasses, special symbols, footnotes, drawing tables, multi columns, multi rows, drawing lines, itemizing, enumerating

**Module 3**

**Mathematical Symbols**

Creating mathematical articles, different mathematical symbols and notations, fractions, matrices, arrays, equations, Greek symbols, defining commands, theorems.

  
**Principal**  
**Mahatma Gandhi College**  
**Thiruvananthapuram**

  
**Ram Kumar R**  
**(HOD), Math**

**Mahatma Gandhi College, Thiruvananthapuram**  
**Department of Mathematics**

**Add-on Course on LATEX Programming**  
**(2021-22)**

List of Participants

Sl. No	Name	Phone No	Email-ID	Class
1	ABHIRAMI. A	9188010829	abhiramiammu2110@gmail.com	II MSc Physics
2	ADWAITHA J H	7306946887	adwaithahari12@gmail.com	II MSc Physics
3	ANAKHALEKSHMI V S	9526459721	anakhalekshmi8@gmail.com	II MSc Physics
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5	ARATHY AJ	6282323931	arathyaj3@gmail.com	II MSc Physics
6	ARDRA.A.K	8943850039	ardrachinnu2000@gmail.com	II MSc Physics
7	ASWIN R.L.	9633656070	aswinrlchempoor4@gmail.com	II MSc Physics
8	DEVIKA J A	7034063400	devikaja29@gmail.com	II MSc Physics
9	HARSHA S	9645416423	jharsha95@gmail.com	II MSc Physics
10	K A HARITHA	8075122646	haritha23hari@gmail.com	II MSc Physics
11	KASYAP S ASHTTAMAN	8606767095	ashttaman2@gmail.com	II MSc Physics
12	KEERTHANA P.S	8129136368	keerthanaps2016@gmail.com	II MSc Physics
13	KEERTHI VIKRAMAN	9061919135	keerthiv734@gmail.com	II MSc Physics
14	MEENAKSHI. C. S	9188494305	meenakshisanal013@gmail.com	II MSc Physics
15	NANDITHA M KESH	8590490118	nandithamurukesh@gmail.com	II MSc Physics
16	RESHMA SANTHOSH J.S	7593916171	reshmasanthoshjs2018@gmail.com	II MSc Physics
17	SALMA SURUMI	8086594232	salmasurumi99@gmail.com	II MSc Physics
18	VARSHA. R	9947130486	varshar1648@gmail.com	II MSc Physics

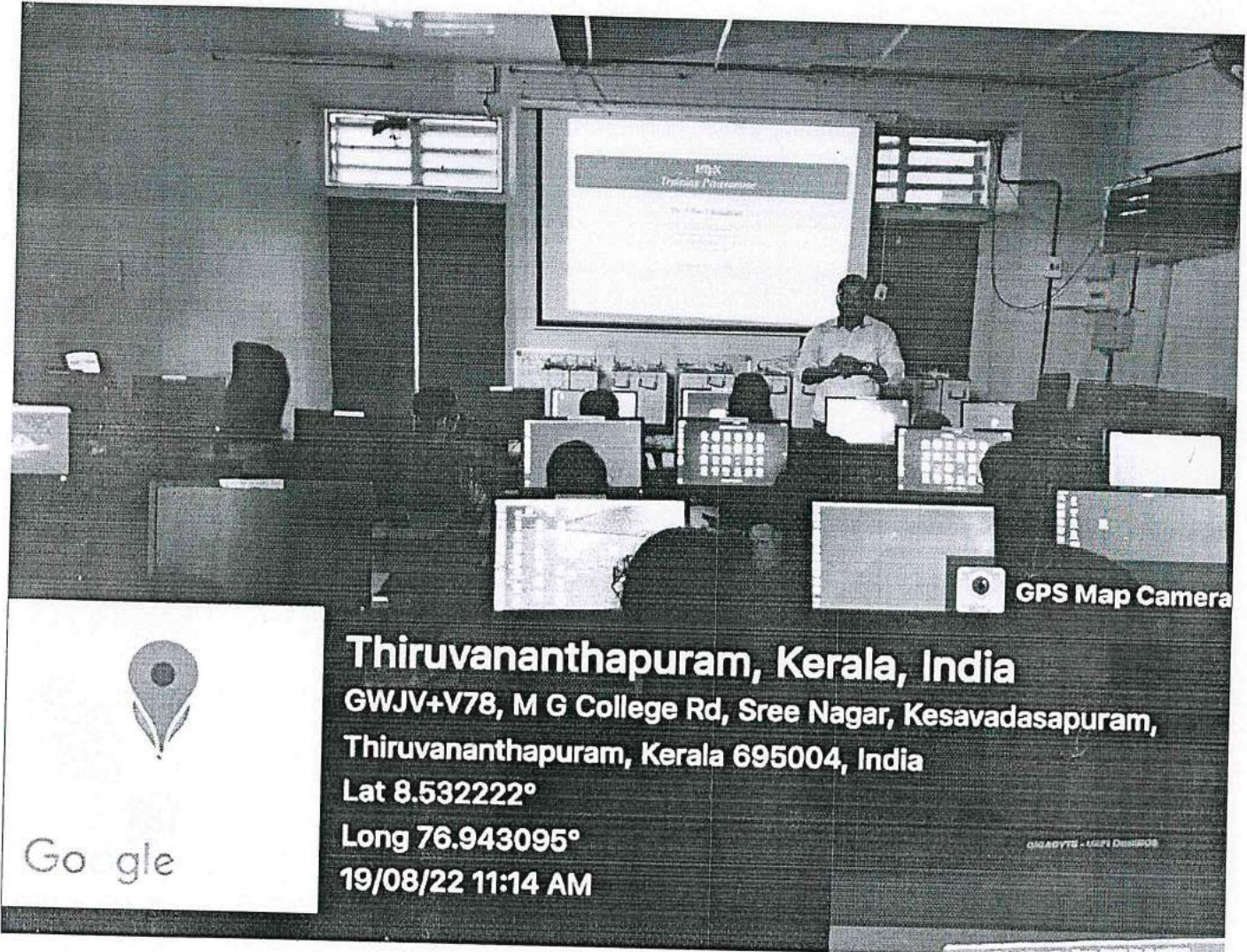
Signature of HOD

*Ram Kumar.R*

Signature of Course Coordinator

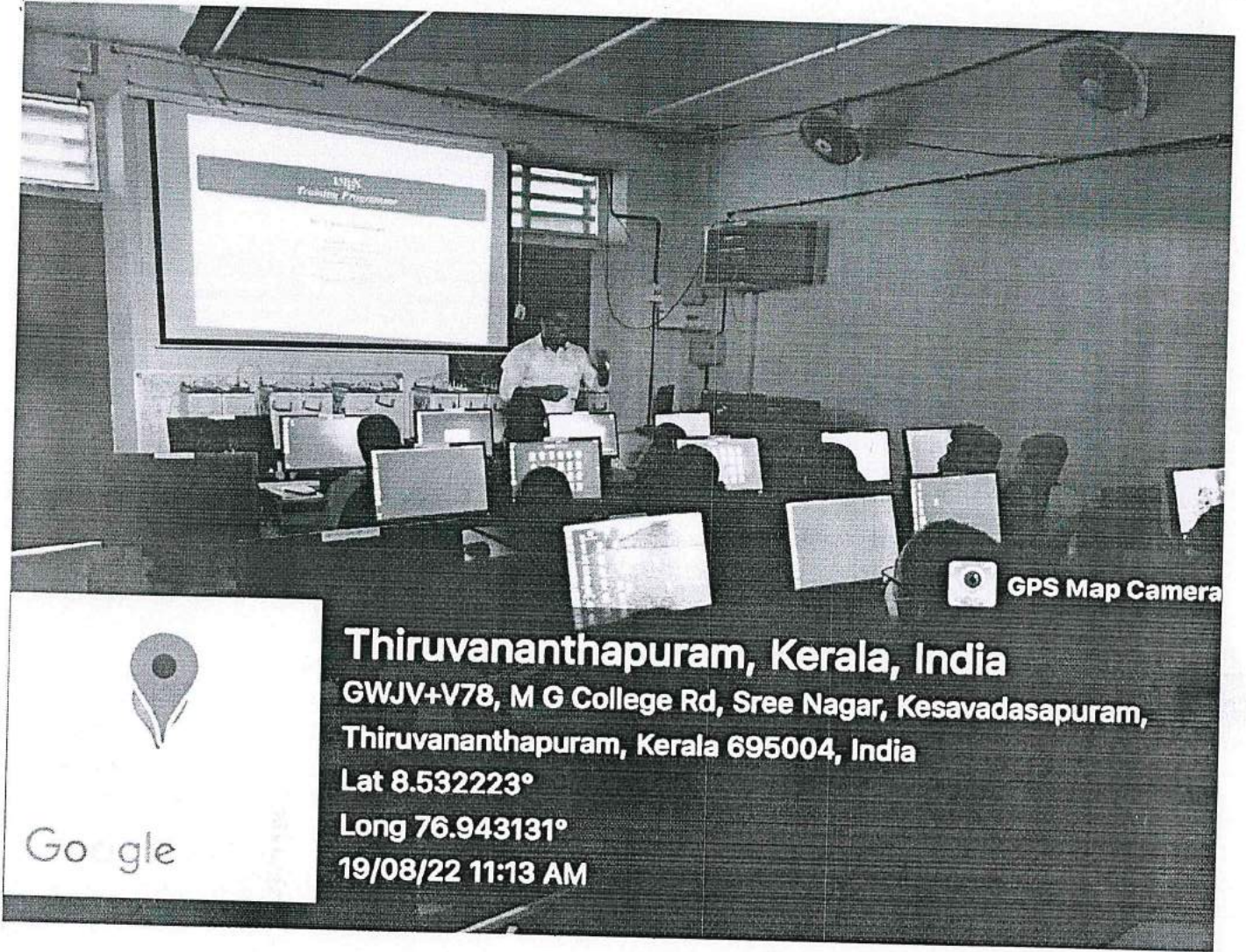
*D. R. Redhe Vasanthan*

*[Signature]*  
**Principal**  
**Mahatma Gandhi College**  
**Thiruvananthapuram**



**Thiruvananthapuram, Kerala, India**  
**GWJV+V78, M G College Rd, Sree Nagar, Kesavadasapuram,**  
**Thiruvananthapuram, Kerala 695004, India**  
**Lat 8.532222°**  
**Long 76.943095°**  
**19/08/22 11:14 AM**

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**Thiruvananthapuram, Kerala, India**

**GWJV+V78, M G College Rd, Sree Nagar, Kesavadasapuram,**

**Thiruvananthapuram, Kerala 695004, India**

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# Mahatma Gandhi College

## Department of Mathematics

### Add on Course on Latex Programming (2021-22) Examination, August, 2022

Time: 3 Hours

Max. Marks : 25

Answer all the questions  
Each question carries 5 marks

I. Write a latex file to obtain the following output:

Mahatma Gandhi College, Thiruvananthapuram  
Fifth Semester BSc. Examination, February, 2020

### Theory of Equations and Vector Analysis

Time : 1 hours

Total Marks : 10

1. One root of  $x^3 - 7x^2 + 17x - 11 = 0$  is  $3 - \sqrt{-2}$ . Find other roots.
2. If  $\alpha_1, \alpha_2, \dots, \alpha_n$  are the roots of the equation  $a_0x^n + a_1x^{n-1} + \dots + a_{n-1}x + a_n = 0$ , find the value of  $\alpha_1 + \alpha_2 + \dots + \alpha_n$ .
3. If  $\alpha, \beta$  and  $\gamma$  are the roots of the equation  $x^3 + px^2 + qx + r = 0$ , form the equation whose roots are  $\alpha - \frac{1}{\beta\gamma}, \beta - \frac{1}{\gamma\alpha}$  and  $\gamma - \frac{1}{\alpha\beta}$ .
4. Verify Green's theorem in the plane for

$$\int_C (xy \, dx + x^2 \, dy)$$

where  $C$  is the curve enclosing the region bounded by the parabola  $y = x^2$  and the line  $y = x$ .

5. (a) State Stoke's theorem.  
(b) State Descartes's rule of sign.

II. Write a latex file to obtain the following output:

The following table gives the perimeter and area of some two dimensional structures.

Sl.No.	Structure	Dimension	Perimeter	Area
1.	Triangle	Sides $a, b, c$	$a + b + c$	$\sqrt{s(s-a)(s-b)(s-c)}$
2.	Rectangle	Sides $l, b$	$2(l + b)$	$lb$
3.	Square	Side $a$	$4a$	$a^2$
4.	Circle	Radius $r$	$2\pi r$	$\pi r^2$

Remarks:

1. For triangle,  $s = \frac{a+b+c}{2}$ .
2. For circle, value of  $\pi = \frac{22}{7}$ .

III. Write a latex file to obtain the following output:

The Fourier integral representation of a function  $f(x)$  is defined as

$$f(x) = \frac{1}{\pi} \int_0^{\infty} (A(s) \cos sx + B(s) \sin sx) ds$$

where

$$A(s) = \int_{-\infty}^{\infty} f(x) \cos sx dx$$

$$B(s) = \int_{-\infty}^{\infty} f(x) \sin sx dx$$

Note that this representation is possible if

1.  $f(x)$  is piecewise continuous in every finite interval
2.  $f(x)$  has right-hand derivative and left-hand derivative at every point
3.  $f(x)$  is absolutely integrable



IV. Write a latex file to obtain the following output:

Diameters of different planets are given below:

No.	Planet	Diameter(km)
1	Mercury	4878
2	Venus	12104
3	Earth	12756
4	Mars	6794
5	Jupiter	142984

Based on this data, answer the following questions:

1. Find the average diameter of these planets. Use the formula

$$\bar{x} = \frac{x_1 + x_2 + \cdots + x_n}{n}$$

2. If  $r = \frac{d}{2}$  where  $r$  is radius and  $d$  is diameter, then find the radius of earth.

V. Write a latex file to obtain the following output:

The system of equations

$$x + y - z = 1$$

$$x - y + z = 1$$

$$x + y + z = 1$$

can be written in matrix form as

$$\begin{bmatrix} 1 & 1 & -1 \\ 1 & -1 & 1 \\ 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}.$$

Note that the system of equations  $AX = B$  has

1. solution if and only if  $\text{rank}(A) = \text{rank}(AB)$
2. unique solution if  $\text{rank}(A) = \text{rank}(AB) = n$ , the number of variables
3. many solutions if  $\text{rank}(A) = \text{rank}(AB) < n$ , the number of variables

**Mahatma Gandhi College, Thiruvananthapuram**  
**Department of Mathematics**

**Add-on Course on LATEX Programming**  
**(2021-22)**

**Mark List of Examination**

**Maximum Marks : 25**


Sl. No	Name	Marks
1	ABHIRAMI. A	22
2	ADWAITHA J H	23
3	ANAKHALEKSHMI V S	22
4	APARNA SANKAR R S	20
5	ARATHY AJ	21
6	ARDRA.A.K	24
7	ASWIN R.L.	23
8	DEVIKA J A	23
9	HARSHA S	20
10	K A HARITHA	22
11	KASYAP S ASHTTAMAN	<del>22</del> Ab
12	KEERTHANA P.S	21
13	KEERTHI VIKRAMAN	23
14	MEENAKSHI. C. S	24
15	NANDITHA M KESH	24
16	RESHMA SANTHOSH J.S	22
17	SALMA SURUMI	20
18	VARSHA. R	21

Signature of HOD

Ram Kumar

Signature of Course Coordinator

Dr. K. Radhakrishnan

  
**Principal**  
**Mahatma Gandhi College**  
**Thiruvananthapuram**

**Mahatma Gandhi College, Thiruvananthapuram**  
**Department of Mathematics**

**Report on Add-on Course on LATEX Programming**

2021-22

The Department of Mathematics invited application for the Latex program and 18 students of II year MSc Physics class were selected for the course. The Principal of the College inaugurated the programme on 08-06-2022. 30 hours of classes on LATEX programme were given to the participants. The classes were taken by Dr. K. Radhakrishnan, Associate Professor, Department of Mathematics and Dr. Ullas Chandran, S V, Assistant Professor, Department of Mathematics, MG College, Thiruvananthapuram. The evaluation and feedback session was conducted on 26-08-2022. The certificates for the participants were issued on 29-08-2022 by the Principal.



Head of the Department

Ram Kumar



Course Coordinator

Dr. K. Radhakrishnan



Principal  
Mahatma Gandhi College  
Thiruvananthapuram

**LINUX Operating System**  
**Department of Mathematics**  
**2021 – 22**

# Notice

Mahatma Gandhi College ,Thiruvananthapuram

Department of Mathematics

Starting an Add-on Course on

Introduction to LINUX operating System

for the academic Year 2021-22

Interested students can join the Program

Contact —Dr Ullas Chandran S V (8891711284)



Principal  
Mahatma Gandhi College  
Thiruvananthapuram



Ram Kumar R  
for HoD Mathematics

**Mahatma Gandhi College, Thiruvananthapuram**  
**Department of Mathematics**

**Add-on Course on Introduction to Linux Operating System (Course Code : MGMM02, Program Code : UG-01)**  
**2021-22**

**Aim of the Course :** To make awareness of Linux operating system and UNIX commands to UG students of First year BSc Mathematics Students of the college.

**Course Outcomes:**

- CO1: To understand the basics of the operating systems UNIX and LINUX
- CO2: To understand the file management using these operating systems
- CO3: To understand file permission and ownerships

**Duration of the Course :** 30 Hours

**Total Intake :** 40 Students

**Mode of Selection :** Interested students of I BSc Mathematics Class

**Syllabus**

**Module 1**

**Introduction to UNIX and LINUX**

History and development of Unix and Linux, Comparison of Unix and Linux distributions, Accessing the command line interface (Terminal)  
Basic UNIX commands – login, directory structure and commands, different file related commands, different file editors, related commands etc.

**Module 2**

**File Management**

Understanding the file system hierarchy, Listing files and directories (ls), Changing directories, Creating, copying, moving and deleting files, Working with text files, text editing with text editors, Searching for texts in files.

**Module 3**

**File Permissions and Ownerships**

Understanding UNIX file permissions, Modifying file permissions (chmod, chown), Special permissions, Creating and extracting compressed files, Managing archives with tar.

*RL*  
*Ram Kumar*  
For HOD,  
Mathematics

*[Signature]*  
Principal  
Mahatma Gandhi College  
Thiruvananthapuram

MAHATMA GANDHI COLLEGE, THIRUVANANTHAPURAM  
DEPT. OF MATHEMATICS  
Add-on course on Introduction to Linux Operating System

List of participants

SL.No.	Name	email id	Phone no.
1	AKSHAY. A	akshayajay0724@gmail.com	9605303823
2	AMRUTHENDU M	aammu4107@gmail.com	7736040866
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36	SANGEETH KRISHNA. S. R	krishnasangeeth146@gmail.com	7593011586
37	SANKAR GANESH	sankarmsstark@gmail.com	9778545408
38	NAVEENA V	naveenavinayan@gmail.com	6238450225
39	SIKHA S	sikhasudhin002@gmail.com	7736065945
40	VEENA.V.KUMAR	veenakumar581@gmail.com	7907239385

  
**Principal**  
Mahatma Gandhi College  
Thiruvananthapuram

## Add-On Course on Linux OS

Time: 2 Hours

Maximum Marks: 40

*Instruction:* Answer all questions

### Part-A

Multiple Choice Questions (MCQs) Each carry 1 mark ( $5 \times 1 = 5$ )

1. Which of the following is not a Linux distribution?
  - a) Ubuntu
  - b) Fedora
  - c) Apache
  - d) CentOS
2. What is the default shell in most Linux distributions?
  - a) Bash
  - b) Zsh
  - c) Fish
  - d) Ksh
3. Which command is used to list all files including hidden ones in Linux?
  - a) ls-l
  - b) ls-a
  - c) ls-l
  - d) ls-R
4. In Linux, what does the command 'chmod 755 file.txt' do?
  - a) Gives read and write permissions to the owner, and read-only permissions to others.
  - b) Gives read, write, and execute permissions to the owner, and read-only permissions to others.
  - c) Gives read, write, and execute permissions to the owner, group, and others
  - d) Gives read-only permissions to the owner, and read, write, and execute permissions to others.
5. Which command is used to install packages in Debian-based Linux distributions?
  - a) apt-get
  - b) yum
  - c) pacman
  - d) zypper

### Part-B

Short Answer Questions. Each carries 5 marks ( $3 \times 5 = 15$ )

6. Explain the difference between 'rm' and 'rmdir' commands in Linux.
7. How do you check the disk space usage on a Linux system?
8. Describe the purpose of the 'grep' command in Linux.



## Part-C

(Long Answer Questions. Each carries 10 marks ( $2 \times 10 = 20$ ))

9. Explain the directory structure of a typical Linux system. Include the purpose of commonly found directories.
10. Describe the steps involved in creating a new user account in Linux. Also, explain how to grant sudo privileges to this user.

  
Principal  
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Thiruvananthapuram

MAHATMA GANDHI COLLEGE ,THIRUVANANTHAPURAM  
 DEPARTMENT OF MATHEMATICS  
 Add-on course on LINUX operating System(MGMM02)  
 Marklist of Assesment

SL.NO.	NAME	Marks (out of 20)
1	AKSHAY. A	20
2	AMRUTHENDU M	20
3	ANASWARA.P	20
4	ARATHY R	20
5	ARSHA PRASAD N	18
6	ASWANI A.S	20
7	B AMAL BHASKAR	18
8	GOWTHAM SANKAR S	20
9	HARIKRISHNAN D	20
10	NANDANA MUKUNDAN	20
11	NANDU G.P	20
12	NEETHU S	20
13	NIDHUN S R	15
14	SANUSH .S	17
15	SARAN PRASAD V	20
16	SREELEKSHMI S S	17
17	VAISHNAV. I	14
18	VISHNU V. S	15
19	ABHIJITH D	15
20	ADARSH RAGHAVAN	17
21	AFRAN S	15
22	AMAL KRISHNA M	14
23	AMALA UNNI B S	20
24	AMALU AJAY	20
25	ANANTHA KRISHNAN	13
26	ANUPAMA R.NAIR	18
27	ASWANI A L	20
28	DEVI NANDANA .P.S	19
29	DHANUSH J	14
30	GAYATHRY P V	20
31	GOPIKA G	20
32	GOURI	20
33	HARI MURALI	17
34	JOBITHA MOL J J	19
35	M S ATHUL	20
36	SANGEETH KRISHNA. S. R	15
37	SANKAR GANESH	20
38	NAVEENA V	20
39	SIKHA S	20
40	VEENA.V.KUMAR	20

*DL*  
 Ram Kumar  
 H.O.D, Mathematics

Principal  
 Mahatma Gandhi College  
 Thiruvananthapuram

Mahatma Gandhi College, Thiruvananthapuram

Department of Mathematics


Report of Add-on Course on Introduction to LINUX Operating System

2021-22

The Department of Mathematics conducted an add-on course on Introduction to LINUX Operating System for the first year students of the BSc Mathematics class of this college. The Principal of the College inaugurated the programme on 25-10-2021. 30 hours of classes on LINUX operating system and UNIX commands were given to the participants. The classes were taken by faculty of the Department of Mathematics, MG College, Thiruvananthapuram. The evaluation and feedback session was conducted on 24-08-2022. The certificates for the participants were issued by the Principal.



Head of the Department

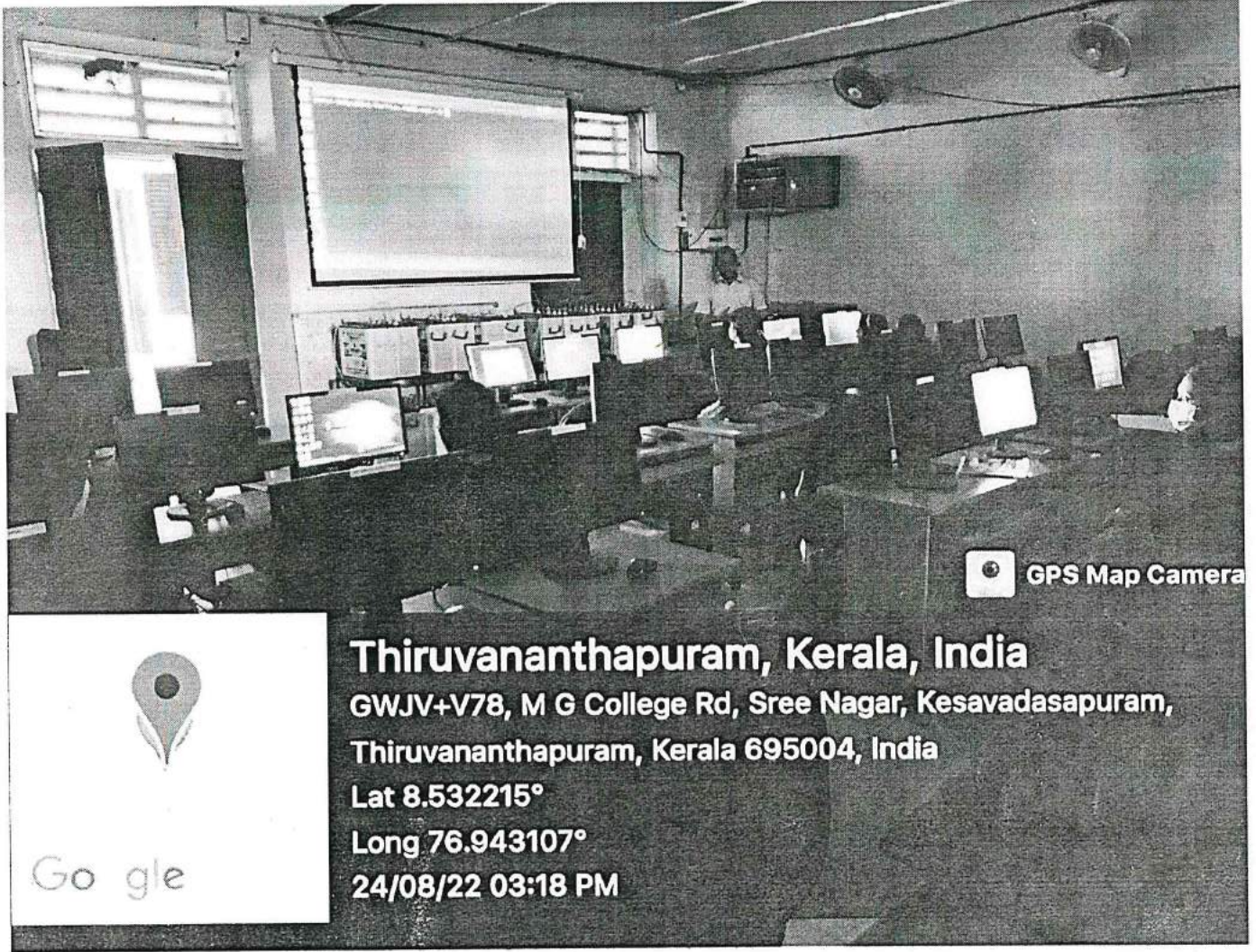


Course Coordinator

Head  
Department of Mathematics  
Mahatma Gandhi College  
Thiruvananthapuram



Principal  
Mahatma Gandhi College  
Thiruvananthapuram



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# **Timeline and Evolution of Physics**

## **Department of Physics**

**2021 – 22**

Add-on Course on

# TIMELINE AND EVOLUTION OF PHYSICS:

*From Ancient to the Modern*

*A course on how modern physics came to be what it is today, and how it continues to grow more and more fascinating....*

## Principles

*What are the key principles that decode the secrets of the nature...*

## Experiments

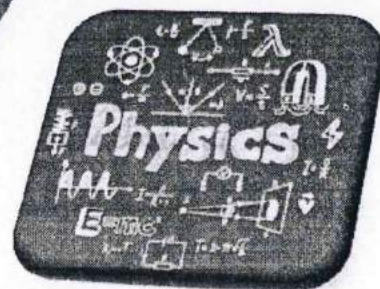
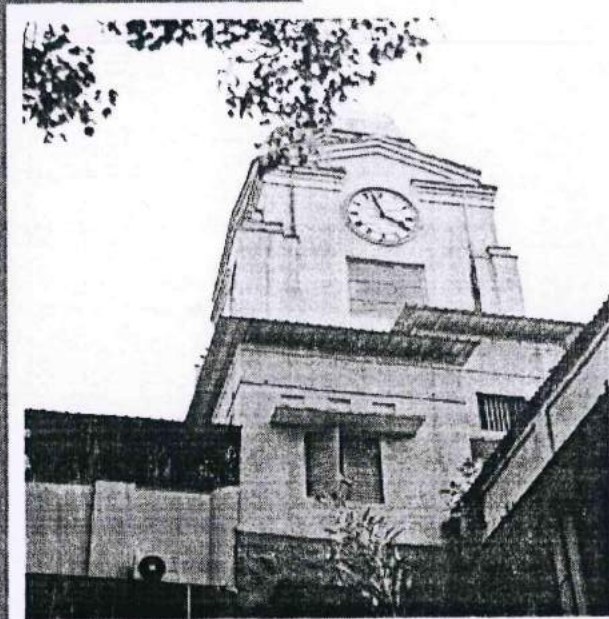
*What were those milestone experiments that threw light over the unknown realms of nature...*


## People

*Who were those great minds who played key roles in paving the milestones, and what were the paths they took...*



MAHATMA GANDHI COLLEGE  
DEPARTMENT OF  
PHYSICS



  
PRINCIPAL  
Mahatma Gandhi College  
Thiruvananthapuram

Enrollment List Of students 2021 - 22

SI No:	Candidate Code	Name of the Candidate
1	23020118001	ABHIRAMI R.SEKHAR
2	23020118002	ABHISHEK G S
3	23020118003	ADITHYAN . S
4	23020118004	AJAY S
5	23020118005	AKSHAYA . A . S
6	23020118006	AMAL. A. NAIR
7	23020118007	ANJAI VINOD
8	23020118008	ANJANA JOSE. J
9	23020118009	ANOOP S
10	23020118010	APARNA J S
11	23020118011	ARDRA S
12	23020118012	ARYA M.R.
13	23020118013	DEVA NARAYAN S
14	23020118014	GG KRISHNAN
15	23020118015	KARTHIKA. S. NAIR
16	23020118016	LEKSHMI SURESH
17	23020118017	MUJEEB RAHUMAN.S
18	23020118018	NANDANA GOPAN
19	23020118019	NIKITHA SYAM
20	23020118020	PALLAVI A D
21	23020118021	PRANAV. P
22	23020118022	REMYA B
23	23020118023	RENJITH LAL. S. B
24	23020118024	ROHITH U
25	23020118025	ROOPA D M
26	23020118026	SOORAJ S
27	23020118027	VISAKH S
28	23020118028	VISAKH.B
29	23020118029	ABHIJITH M
30	23020118030	ABHIRAMI B S
31	23020118031	ABHISHEK P B
32	23020118032	ABHISHEK. A
33	23020118033	ADHWAITH.S.J
34	23020118034	AKSHAY J.M
35	23020118035	ANAND P NAIR
36	23020118036	ANIKA M S

37	23020118037	ANOOP A S
38	23020118038	ARATHY. L .S
39	23020118039	ASWIN G L
40	23020118040	ASWIN J S
41	23020118041	ASWIN M S
42	23020118042	BHARATHKRISHNA P S.
43	23020118043	DETHAN R S
44	23020118044	GAUTHAMY ANIL
45	23020118045	KISHORE MADHAV
46	23020118046	LEKSHMI PRADEEP. S
47	23020118047	NANDA. S. S
48	23020118048	PREETHI P.S.
49	23020118049	SABARIKANTH S S
50	23020118051	SNEHA P
51	23020118052	SYAMKUMAR. S
52	23020118053	VISHAL. B
53	23020118054	JAZIM IBRAHIM
54	23020118055	NANDANA. A.S
55	23020118056	NOUREEN S N
56	23020118057	SREENADH.S
57	23020118058	PRAVEENA V GOPAL
58	23021118001	AARDRA N A
59	23021118002	ABHAY A.S
60	23021118003	ABHINAV H B
61	23021118004	ADARSH M.S
62	23021118005	AKHIL PRADEEP P B
63	23021118006	AMAL KISHORE P
64	23021118007	AMBADI SURESH S S
65	23021118008	ANAND S
66	23021118009	ARCHA M.S
67	23021118010	ARYA R L
68	23021118011	ASWIN A S
69	23021118012	AVANTHIKA RAJESH
70	23021118013	BHAGATH A .R
71	23021118014	GADHA M LEKSHMY
72	23021118015	GOURI. R
73	23021118016	JISHA. L
74	23021118017	KANCHANAKRISHNAN
75	23021118018	MEENAKSHI A M
76	23021118019	PARTHAN.A.S
77	23021118020	PARVATHY PRATHAP



78	23021118021	REMYA CHANDRAN R
79	23021118022	SAJIN R
80	23021118023	SIDHARTH J
81	23021118024	SNEHA A
82	23021118025	SREELEKSHMI B
83	23021118026	A ASWAL
84	23021118027	ABHINAV.V.S
85	23021118028	ABIN .A.S.
86	23021118029	ADITHYA RAJU
87	23021118030	AKASH S K
88	23021118031	AKSHAY JOSHUA
89	23021118035	ARJUN DEV. G
90	23021118036	ASWIN DAS S G
91	23021118037	ASWIN S M
92	23021118038	GAUTHAM S NAIR
93	23021118039	GOKUL B S
94	23021118040	GOPIKA L
95	23021118041	KARTHIKA .B.A
96	23021118042	KRISHNAJA. M
97	23021118043	MEGHNA PRAMOD
98	23021118044	NIVEDA N V
99	23021118045	SNEHA S
100	23021118046	SRAVAN S P
101	23021118047	SRUTHI .S
102	23021118048	VISHNU B A
103	23021118049	ATHUL VIJAY V S
104	23021118050	BEENA.P
105	23021118051	MEKHA .U
106	23021118052	RIJU. B.
107	23021118053	SAJITH.S
108	23021118054	VISHNU S
109	23019118038	ASWANTH V S
110	23019118039	ASWIN DEV J
111	23019118040	DILNA DAMODARAN
112	23019118041	GOVIND C
113	23019118042	HARIGOVIND J R
114	23019118043	HARITHA L H
115	23019118044	JAGAN G PILLAI
116	23019118045	MARIA SEBASTIAN
117	23019118046	NIKHITHA A K
118	23019118047	S BIDHU BHOOSHAN

119	23019118048	UDAYALAL R
120	23019118049	VAISHNAVI PRASAD



PRINCIPAL   
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## Syllabus

(30 Hours)

TIMELINE AND EVOLUTION OF PHYSICS : From Ancient to the Modern

### PRINCIPLES

Aristotelian ideas - Archimedes principle - Heliocentrism - Laws of motion - Snell's law - Coulomb's law - Kinetic theory of gas - Ohm's law - Laws of electromagnetism - Laws of Thermodynamics - Radioactivity - Theory of relativity: special and general - Planck's quantum hypothesis - Uncertainty principle - Hubble's law - Big bang theory - Standard Model - Quantum gravity

### EXPERIMENTS

Newton's discovery of spectrum - Cavendish's weighing of Earth - Joule's demonstration of conservation of energy - Foucault pendulum - Young's double-slit experiment - Discovery of x-rays - Michelson-Morley experiment - Thomson's experiment - Millikan's oil drop experiment - Stern-Gerlach experiment - Rutherford gold foil experiment - Rosalind Franklin's DNA radiograph - Large Hadron Collider - LIGO experiment


### PEOPLE

Anaximander - Archimedes - Galileo Galilei - Isaac Newton - Michael Faraday - James Clark Maxwell - Max Planck - Ernest Rutherford - Niels Bohr - Albert Einstein - Erwin Schrodinger - Louis de Broglie - Werner Heisenberg - Paul Dirac - Richard Feynman - S. Chandrasekhar - S N Bose - C V Raman

### References

Physics in 50 Milestone moments by James Lees (Quad Books)


Science: A history in 100 experiments by John Gribbin and Mary Gribbin (William Collins)

  
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Thiruvananthapuram

## Test Paper

1. The property of object at rest to remain at rest is known as
  - a) Inertness
  - b) Inertia
  - c) Resistance
  - d) sluggishness
2. Coulomb's Law is valid for \_\_\_\_\_
  - a) Only point charge
  - b) For both point charge and distributed charge
  - c) Only distributed charges
  - d) Neither distributed nor point charge
3. What is thermodynamics?
  - a) study of the relationship between heat and other forms of energy
  - b) study of the conversion of chemical energy to other forms of energy
  - c) study of the relationship between mechanical energy to other forms of energy
  - d) study of the conversion of mechanical energy to other forms of energy
4. In Young's Double Slit Experiment, if instead of monochromatic light white light is used, what would be the observation?
  - a) The pattern will not be visible
  - b) The shape of the pattern will change from hyperbolic to circular
  - c) Colored fringes will be observed with a white bright fringe at the center
  - d) The bright and dark fringes will change position
5. According to the Big Bang theory, the universe has expanded from
  - a) very high-density and low-temperature state
  - b) very high-density and high-temperature state
  - c) very low-density and high-temperature state
6. What did Rutherford conclude from his gold foil experiment?

- a) Alpha particles are much smaller than gold atoms.
- b) Alpha-particles are doubly-charged helium ions.
- c) Radius of the nucleus is about  $10^5$  times less than the radius of the atom.
- d) Most of the Alpha-particles passed through the gold foil.
7. What are gravitational waves?
- a) Faint ripples in space time
- b) Fourth dimension which is hard to fathom
- c) Collision which sends ripples across the universe
- d) Both a and b
8. What is the uncertainty principle proposed by Werner Heisenberg?
- a) The principle that states that the position and velocity of a particle cannot be measured simultaneously with infinite precision
- b) The principle that states that the energy and time of a particle cannot be measured simultaneously with infinite precision
- c) The principle that states that the mass and charge of a particle cannot be measured simultaneously with infinite precision
- d) The principle that states that the temperature and pressure of a particle cannot be measured simultaneously with infinite precision
9. The Snell's law can be derived from which type of incidence?
- a) Incidence angle
- b) Reflected angle
- c) Refracted angle
- d) Oblique incidence
10. According to Planck's quantum theory, what is the smallest unit of energy that can be emitted or absorbed by an atom?
- a) Photon
- b) Electron
- c) Proton
- d) Neutron

  
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## Test Paper Marks

Sl No:	Candidate Code	Name of the Candidate	20
1	23020118001	ABHIRAMI R.SEKHAR	20
2	23020118002	ABHISHEK G S	18
3	23020118003	ADITHYAN . S	18
4	23020118004	AJAY S	19
5	23020118005	AKSHAYA . A . S	17
6	23020118006	AMAL. A. NAIR	17
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12	23020118012	ARYA M.R.	18
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14	23020118014	GG KRISHNAN	16
15	23020118015	KARTHIKA. S. NAIR	16
16	23020118016	LEKSHMI SURESH	17
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34	23020118034	AKSHAY .J.M	19
35	23020118035	ANAND P NAIR	17
36	23020118036	ANIKA M S	17

*Abhirami*  
*Abhis*

*Adityan*  
*Ajay*

*Akshaya*  
*Amal*

*Anjai*  
*Anjana*

*Anoop*  
*Aparna*

*Ardra*  
*Arya*

*Deva*  
*GG*

*Karthika*  
*Lekshmi*

*Mujeeb*  
*Nandana*

*Nikitha*  
*Pallavi*

*Pranav*  
*Remya*

*Renjith*  
*Rohith*

*Roopa*  
*Sooraj*

*Visakh*  
*Visakh*

*Abhi*  
*Abhirami*

*Abhishek*  
*Abhishek*


*Adhwaith*  
*Akshay*

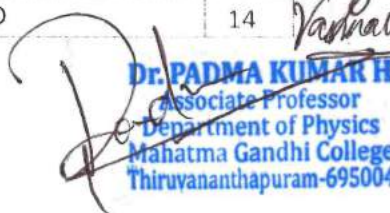
*Anand*  
*Anika*

*Anika*

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50	23020118051	SNEHA P	20	<del>Sneha</del>
51	23020118052	SYAMKUMAR. S	17	<del>Syam</del>
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53	23020118054	JAZIM IBRAHIM	18	<del>Jazim Ibrahim</del>
54	23020118055	NANDANA. A.S	20	<del>A S Nandana</del>
55	23020118056	NOUREEN S N	20	<del>Noureen</del>
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64	23021118007	AMBADI SURESH S S	16	<del>Ambadi</del>
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78	23021118021	REMYA CHANDRAN R	17	<del>Remya Chandran</del>

79	23021118022	SAJIN R	19	Jayin
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81	23021118024	SNEHA A	19	Sneha A
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83	23021118026	A ASWAL	17	Aswal
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85	23021118028	ABIN .A.S.	15	Abhinav
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87	23021118030	AKASH S K	14	Akash S K
88	23021118031	AKSHAY JOSHUA	15	Akshay Joshua
89	23021118035	ARJUN DEV. G	16	Arjun Dev. G
90	23021118036	ASWIN DAS S G	16	Aswin Das S G
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114	23019118043	HARITHA L H	18	Haritha L H
115	23019118044	JAGAN G PILLAI	19	Jagan G Pillai
116	23019118045	MARIA SEBASTIAN	19	Maria Sebastian
117	23019118046	NIKHITHA A K	20	Nikhitha A K
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119	23019118048	UDAYALAL R	18	Udayalal R
120	23019118049	VAISHNAVI PRASAD	14	Vaishnavi Prasad

  
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**Dr. PADMA KUMAR H**  
 Associate Professor  
 Department of Physics  
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### Feedback Analysis


Sl No:	Candidate Code	Name of the Candidate	Excellent	Very good	Good	Satisfactory	po or
1	23020118001	ABHIRAMI R.SEKHAR	✓				
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35	23020118035	ANAND P NAIR	✓			
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44	23020118044	GAUTHAMY ANIL	✓			
45	23020118045	KISHORE MADHAV	✓			
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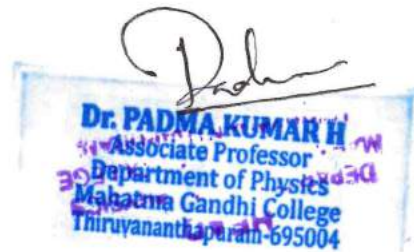
  
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 MAHATMA GANDHI COLLEGE  
 THIRUVANANTHAPURAM

  
 PRINCIPAL  
 Mahatma Gandhi College  
 Thiruvananthapuram

DR. PADMA KUMAR H  
 Associate Professor  
 Department of Physics  
 Mahatma Gandhi College  
 Thiruvananthapuram-695004

## Report

The course was conducted for 120 students. Discussions were conducted on daily activities based on Newton's laws of motion and gravity. The importance on laws of thermodynamics and its applications along with simple problems were also attended in the course. The formation of Universe, the big bang theory was discussed. The famous experiments like Newton's discovery of spectrum - Joule's demonstration of conservation of energy, Young's double-slit experiment, Michelson-Morley experiment, Thomson's experiment, Millikan's oil drop experiment, Stern-Gerlach experiment were discussed. The discussion was also carried on eminent people like Archimedes, Isaac Newton, Michael Faraday, James Clark Maxwell - Max Planck, Ernest Rutherford, Neil's Bohr, Albert Einstein, S. Chandrasekhar, S N Bose - C V Raman etc. Students were exposed to the world of science specifically physics with the basic ideas in the subject and importance and contribution of physics to our day today life. Students were satisfied with the course.

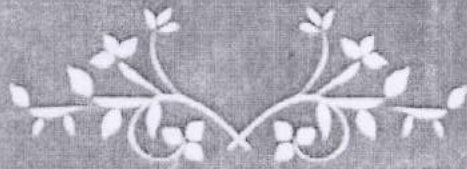


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**Transactional Analysis**  
**Department of Psychology**  
**2021 – 22**

THIRUVANANTHAPURAM



DEPARTMENT  
OF  
PSYCHOLOGY

**Add on course on  
Transactional  
Analysis  
2021-22**

**REGISTER NOW:**

**COURSE COORDINATOR:**

**DR.PRATHIBHA S NAIR**

**PH:9446323061**

**Classes handled by**

**Dr.Prathibha S Nair(MG College)**

**Sri Matus Vengal(Sanjeevani**

**Befrienders)**





**TRANSACTIONAL ANALYSIS - PEOPLE MANAGEMENT SKILLS WITH**

**TA Total Hours : 30**

**Course Outcomes:**

**CSO1: Students will become familiar with basics of Transactional Analysis**

**CSO2: Students can identify People Management Skills in schools and workplaces**

**Module I 10 Hours**

Identifying areas of People management in Schools, work

places 360° interpersonal relationship in schools, workplaces

Non Verbal Communication — Body Movement or

Kinesics, Physical characteristics, Vocal quality, Proxemics, Artifacts

and Environment . Listening and Responding – Active Listening,

Giving Feedback, Paraphrasing

**Module 2 10 Hours**

TA introduction, Ego states, Structure model, Contamination and Exclusion, Diagnosis of ego states, Ego grams

Motivation — Structure, Stimulus and Recognition Hunger . Emotional intelligence



*Patt*  
P. G. D

Module 3. 10 Hours

Transaction - definition, types , rules

Strokes — Definition, types, stroke economy

Life Position – Definition ,Ok ness , 4 position , Social

Time Structuring and effective life

Reference

TA Today

Stewart I , and Joines V

  
Principal  
Mahatma Gandhi College  
Thiruvananthapuram



**ADD ON COURSE**  
**DEPARTMENT OF PSYCHOLOGY**  
**TRANSACTIONAL ANALYSIS**  
**2021-2022**

**MAX MARKS:20**

**ANSWER THE FOLLOWING**

1. Non verbal communication is
2. Active listening is
3. Proxemics is
4. Paraphrasing is
5. Ego grams are
6. Strokes is

**1 x 6=6**

6. What are the various ego states?
7. What is the ego structure model?
8. What is motivation and its structure?
9. What is hunger? Explain stimulus and recognition
10. What is emotional intelligence?
11. What is contamination and exclusion?
12. Explain body movember or kinesics in non verbal communication

**7 x 2=14**

  
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**Department of Psychology**

Add on Course

Transactional Analysis

2021- 2022

Sl. No.	Name of the Student	Total mark	Mark obtained
1.	Aiswarya S S	20	18
2.	Anakha S	20	19
3.	Aparna K N	20	18
4.	Arsha A S	20	17
5.	Adharsh A S	20	16
6.	Sandeep Chandran	20	20
7.	Soorya B Raj	20	20
8.	Bhagya R Nair	20	18
9.	Dileep T S	20	20
10.	Megha J S	20	15
11.	Lekshmi B	20	18
12.	Deepika R S	20	17
13.	Sankeerthana S	20	16
14.	Gopika Anil Kumar	20	18
15.	Vaishaki D V	20	19
16.	Saraswathi Devi K	20	19
17.	Kavya S	20	17
18.	Syam Kumar S S	20	18
19.	Gopika J R	20	19
20.	Akhil A L	20	19
21.	Krishna Chandran	20	16
22.	Nandana V	20	18
23.	Swathi J Das	20	17
24.	Rahul R	20	19
25.	Abhirami Raj A G	20	20
26.	R Devapriya	20	17
27.	Aneeta Grace	20	17
28.	Anagha Ashok	20	18
29.	Vyshna G	20	17
30.	Anjali Mohan M	20	19
31.	Divya M	20	19
32.	Sooraj Singh	20	17
33.	Gayathri	20	18
34.	Krishna Dev	20	19
35.	Doel Douglas	20	18
36.	Dipin D S	20	19
37.	Krishna Prasad	20	17
38.	Karthik V Nair	20	18

  
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REPORT OF ADD ON COURSE ON TRANSACTIONAL ANALYSIS. (2021-22)

THE SPECIFIC TITLE OF THE COURSE WAS 'PEOPLE ENHANCEMENT SKILLS WITH TA'. THE COURSE COMPRISED OF 30 HOURS. 38 STUDENTS HAD ENROLLED FOR THE COURSE. THIS COURSE WAS CONDUCTED IN ASSOCIATION WITH SANJEEVANI BEFRIENDERS WITH WHOM MOU IS SIGNED. TA TRIVANDRUM CHAPTER RUNS IN SANJEEVANI BEFRIENDERS. THE COURSE WAS TAKEN BY SRI MATIUS VENGAL OF SANJEEVANI AND DR PRATHIBHA S NAIR, HEAD OF THE DEPARTMENT OF PSYCHOLOGY WHO IS A BTA HOLDER





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DEPARTMENT OF PSYCHOLOGY  
Mahatma Gandhi College

30. Anjali. Mohan. M	III DC	Anjali
31. Divya. M	III DC	Divya
32. Suresh Singh	III DC	Suresh Singh
33. GAYATHRY VINAY NARAYAN	III DC	Gayathry
34. Krishna Dev S.A	III DC	Krishna
35. DOEL DOUGLAS	III DC	Doel
36. Dipin. D.S	III DC	Dipin
37. Krishna Prasad	III DC	Krishna
38. KARTHIK V NAIR	III DC	Karthik

  
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**PRATHIBHA S NAIR**  
 COURSE CO-ORDINATOR

**Yoga and Stress Management**

**Department of Psychology**

**2021 – 22**

MAHATMA GANDHI COLLEGE  
THIRUVANANTHAPURAM

Department  
of  
Psychology

ADD ON COURSE ON  
Yoga and Stress  
Management

2021-22

Register now :

Course Coordinator : Dr.Prathibha S Nair

Phone : 9446323061





## ADD-ON COURSE – YOGA AND STRESS MANAGEMENT

Duration: 30 hours

Instructor: Dr. Prathibha S Nair

Department of Psychology

Mahatma Gandhi College, Thiruvananthapuram

### Course Outcomes

CSO1. To familiarize with the concept of yoga.

CSO2. Effectively use Yoga Asanas for stress management.

### Module-wise topics:

Module 1: Introduction

Duration:10 hours

- Relevance of Yoga in Modern Life- Misconceptions about Yoga – Secular Nature of Yoga

Module 2: Stress

Duration:10 hours

- Definition of stress
- Causes of Stress - Symptoms of Stress -Physical-Psychological-Behavioral
- Coping with Stress – relaxation- life style management.

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*Prathibha S Nair*  
P.S.N

Module 3: (Theory and Practicals)

Duration: 10 hours


- Basic Relaxation Techniques
- Simple meditation Techniques
- Basic Pranayama Techniques
- Yoga Nidra
- Basic Asanas (Postures).

### References

Iyengar, B.K.S (2011) Light on yoga. Harper Collins Publishers, New Delhi

Tamini, I.K (2011) Commentary - Harper Collins Publishers, New Delhi

Swami Vivekananda, (2004). Raja Yoga revised. Cosmo Publication, New Delhi.

  
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**ADD ON COURSE**  
**DEPARTMENT OF PSYCHOLOGY**  
**YOGA AND STRESS MANAGEMENT**  
**2021-2022**

**MAX MARKS:20**

**ANSWER THE FOLLOWING**

1. Relevance of yoga in modern life
2. Basic relaxation techniques
3. Simple meditation techniques
4. What is yoga nidra?
5. What are the basic asanas?

**3 x 5=15**

6. What is stress? Mention its types and causes.  
Also mention its symptoms

**5 x 1=5**

  
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**Department of Psychology**  
**Add on Course**  
**Yoga and Stress Management**  
**2021-2022**

Sl	Name of the Student	Total mark	Mark obtained
1	Arsha BS	20	18
2	Bhagya R Nair	20	19
3	Deepika R S	20	18
4	Gopika Anil Kumar	20	17
5	Aiswarya S S	20	16
6	Apsara KN	20	20
7	Vaishaki DV	20	20
8	Kavya S	20	18
9	Anagha N	20	20
10	Lekshmi B	20	15
11	Dileep T S	20	18
12	Megha J S	20	17
13	Sankeerthana S	20	16
14	Abhirami Raj A G	20	18
15	Swathi J Das	20	19
16	Adharsh A S	20	19
17	Akhil A L	20	17
18	Gopika J R	20	18
19	Anjali Mohan M	20	19
20	Sandeep Chandran B M	20	19
21	Dipin D S	20	16
22	Gayathri	20	18
23	Saraswathi Devi K	20	17
24	Sooraj Singh	20	19
25	Syam kumar SS	20	20
26	Aneeta Grace	20	17
27	Krishna Dev	20	17
28	Doel Douglas	20	18
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30	Krishna Chandran	20	19
31	Divya M	20	19
32	Krishnaprasad	20	17
33	Rahul R	20	18
34	R Devapriya	20	19
35	Karthik V Nair	20	18
36	Anakha S	20	19
37	Vaishna G	20	17
38	Anagha Ashok	20	18



P. P. O

**Department of Psychology**  
**Add on Course**  
**Yoga and Stress Management**  
**2021-2022**

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16	Adharsh A S	20	19
17	Akhil A L	20	17
18	Gopika J R	20	18
19	Anjali Mohan M	20	19
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34	R Devapriya	20	19
35	Karthik V Nair	20	18
36	Anakha S	20	19
37	Vaishna G	20	17
38	Anagha Ashok	20	18



P. P. O


39	Lekshmi B	20	19
40.	Abin P.B	20	18
41.	Raisa Sumayya R	20	17
42.	Aiswarya Aavi	20	19
43.	Ajmiya A S	20	18
44.	Aswathy .P	20	17
45.	Gouri R	20	17
46.	Jana M J	20	20
47.	Muhammed Ashik	20	20
48.	Nandana Nair C S	20	20
49.	Thomas Biju	20	19
50.	Aksa T Rajan	20	18
51.	Alveena Mary Biju	20	18
52.	Amna Thajudheen	20	17
53.	Ananthkrishnan A T	20	19
54.	Anjali S. L	20	18
55.	Aparna Vijay	20	19
56.	Ardra S Kumar	20	18
57.	Aswani Deva A. L	20	18
58.	Jincy P Roy	20	17
59.	Lekshmi Sanal	20	19
60.	Megha G Nair	20	19
61.	Pranav B G	20	20
62.	Rahi R Nair	20	18
63.	Rejo R	20	19
64.	Sivani J R	20	18
65.	Stephy. Justine	20	19

  
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REPORT OF ADD ON COURSE ON YOGA AND STRESS MANAGEMENT (2021-22)

THIS ADD-ON COURSE WAS INTRODUCED TO STUDENTS TO BENEFIT THE TEACHINGS OF YOGA IN STRESS MANAGEMENT. 65 STUDENTS ENROLLED FOR THE COURSE AND COMPLETED THE COURSE. THE COURSE COMPRISED OF 30 HOURS. THE STUDENTS WERE TAUGHT BOTH THE THEORY AND PRACTICALS. THE COORDINATOR OF THE COURSE WAS DR PRATHIBHA S NAIR, HEAD OF THE DEPARTMENT OF PSYCHOLOGY.

  
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Thiruvananthapuram

  
Dr Prathibha S Nair

## Add on Course Yoga and Stress Management

1. Asha A.S	III DC	Asha
2. Bhagya R.Nair	III DC	Bhagya
3. Deepika R.S	III DC	Deepika
4. Gopika Anilkumar	III DC	Gopika
5. Anwaraya S.S.	III DC	Anwaraya
6. Aparna K.N	III DC	Aparna
5. Soorya B.Rej	III DC	Soorya
7. Vaishakhi D.V	III DC	Vaishakhi
8. Kanya S	III DC	Kanya
8. Anakha N	III DC	Anakha
10. Lekshmi B	III DC	Lekshmi
11. DILEEP T.S	III DC	Dileep
12. Megha J.S	III DC	Megha
13. Sankeerthana S	III DC	Sankeerthana
14. Swathy J.Das	III DC	Swathy
15. Abhisami Raj A.G	III DC	Abhisami
16. Adharsh A.S	III DC	Adharsh
17. AKHIL A.L	III DC	Akhil
18. Gopika J.R	III DC	Gopika
19. Anjali Mohan M	III DC	Anjali
20. Sandeep Chandran B.M	III DC	Sandeep
21. Dipin D.S	III DC	Dipin
22. Gayathri Venay	III DC	Gayathri
23. Saraswathi Devi K	III DC	Saraswathi Devi
22. Sujay Singh	III DC	Sujay Singh
25. Syamkumar S.S	III DC	Syamkumar
26. Anesha Grace	III DC	Anesha
27. Krishna Dev	III DC	Krishna
28. DOEL DOUGLAS	III DC	Doel Douglas
29. Nandana V	III DC	Nandana

32. Krishna Prasad	III DC	Krishna
33. Rahul R	III DC	Rahul
34. R. DEVAPRIYA	III DC	Devapriya
35. KARTHIK V NAIR	III DC	Karthik
36. Arakha S	III DC	Arakha
37. Vyshta G	III DC	Vyshta
38. Anakha Ashok	III DC	Anakha
39. Lekshmi B	III DC	Lekshmi
40. Abin P.B	Ist DC	Abin
41. Raisa Sumayya R	Ist DC	Raisa
42. Atswaiya Aarti	Ist DC	Atswaiya
43. Ajmija A.S	Ist DC	Ajmija
44. Aswathi P.	Ist DC	Aswathi
45. Gauri R	Ist DC	Gauri
46. Jara M.J	Ist DC	Jara
47. Muhammed Ashik	Ist DC	Muhammed
48. Nandana Nair C.S	Ist DC	Nandana
49. Thomas Biju	Ist DC	Thomas
50. Aksha T. Rajan	Ist DC	Aksha
51. Alveena Mary Biju	Ist DC	Alveena Mary
52. Anna Thajudeen	Ist DC	Anna
53. Anantha Krishnan A.T	Ist DC	Anantha
54. Anjali S.L	Ist DC	Anjali
55. Aparna Vijay	Ist DC	Aparna
56. Anika S. Kumar	Ist DC	Anika
57. Aswami Deva A.L	Ist DC	Aswami
58. Jimmy P. Joy	Ist DC	Jimmy
59. Lekshmi Sanal	Ist DC	Lekshmi
60. Megha G. Nair	Ist DC	Megha
61. Premav B.G	Ist DC	Premav
62. Rishi R. Nair	Ist DC	Rishi
63. Raju R.	Ist DC	Raju
64. S...	Ist DC	S...