



**PG & Research Department of Mathematics  
MARY MATHA ARTS & SCIENCE COLLEGE  
MANANTHAVADY**

(Affiliated to Kannur University)

[www.marymathacollege.ac.in](http://www.marymathacollege.ac.in), [mmcmntdy@gmail.com](mailto:mmcmntdy@gmail.com)

Mananthavady

29.06.2021

Dr Bindhu K Thomas  
Assistant Professor

To  
The Principal  
Mary Matha Arts & Science College Mananthavady

Sir,

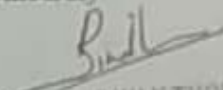
Sub: Commencement of Certificate course by the Department of Mathematics Reg.

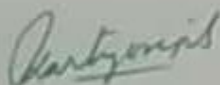
We are planning to conduct a certificate course on **LaTeX for Beginners** (Code No. CCMATLB21). The total contact hours will be 30 and maximum intake will be limited to 25. The course is intended to cover the basics of Latex, the type setting language. I humbly request you to permit the department to conduct the above said course and also request your kind support for the successful completion.

The details are attached for your kind perusal.

Thanking You

Sincerely

  
DR. BINDHU K THOMAS  
Assistant Professor  
Department of Mathematics  
Mary Matha Arts & Science College  
Mananthavady - 870445



*Recommended and forwarded*

  
29/6/2021

IQAC Co-ordinator  
Mary Matha Arts & Science College  
P.O., Mananthavady - 870445



**PG & RESEARCH DEPARTMENT OF MATHEMATICS**  
**MARY MATHA ARTS AND SCIENCE COLLEGE , MANANTHAVAD**

*Short Term Certificate Course on*  
**LaTeX for Beginners**  
***CCMATLB21***

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Applications are invited

- Duration : 30 hours
- No of seats: 25
- Registration fee: Nil

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Course starts on  
06/12/2021

For further Details: Dr Bindhu K Thomas (960574783)  
Mr Binoy Joseph (9946234220)



**PG & Research Department of Mathematics**  
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Mananthavady

10.06.2021

Dr Bindhu K Thomas  
Assistant Professor

To  
The Principal  
Mary Matha Arts & Science College Mananthavady

Sir,


**Sub:** Constitution of BOS reg.

We would like to constitute the Board of Studies for the conduct of Certificate course 'CCMATLB21:LaTeX for Begginers' in our department. Kindly approve the following panel of members for Board of Studies.

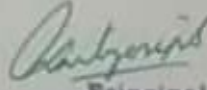
Name	Designation	College	Remarks
Dr Bindhu K Thomas	Assistant Professor	Mary Matha Arts & Science College, Mananthavady	Chairman cum Convenor
Mr Binoy Joseph	Assistant Professor	Mary Matha Arts & Science College, Mananthavady	Member
Ms Jimly Manual	Assistant Professor	M G College, Iritty	External Member

Kindly do the needful.

Thanking You

Sincerely 

DR. BINDHU K THOMAS  
Assistant Professor  
Department of Mathematics  
Mary Matha Arts & Science College  
Mananthavady - 670545

  
Principal

Mary Matha Arts & Science College  
P. O. Vemom, Mananthavady 670545



**PROCEEDINGS OF THE PRINCIPAL, MARY MATHA ARTS & SCIENCE COLLEGE,  
MANANTHAVADY, WAYANAD – 670645.**

Sub-Coll. Edn- Certificate Course – LaTeX for Beginners-(Code No.CCMATLB21) Board of  
Studies (BOS)-Sanctioned- orders issued – reg.

Ref:- (1) The College Council meeting held on 01/12/2021.

MMC/CC/2021(1)

DATED: 02.12.2021

**ORDER**

As per reference cited(1) above the College Council meeting held on 01/12/2021 has decided to approve the Board Of Studies(BOS) of Certificate Course in LaTeX for Beginners-(Code No.CCMATLB21) proposed by the Department of Mathematics during the Academic year 2021-2022.

Board of Studies for the Certificate Programme is constituted with the following members

Name of the Teacher	Designation	Institution	Remarks
Dr. Bindhu K Thomas	Assistant Professor	Mary Matha Arts & Science College, Mananthavady	Chairman cum Convener
Mr. Binoy Joseph	Assistant Professor	Mary Matha Arts & Science College, Mananthavady	Member
Ms. Jimly Manual	Assistant Professor	M G College, Iritty	External Member

The following shall be the functions of the Board of Studies:

- To frame and periodically revise the syllabus of the certificate course.
- To recommend to the rules, regulations and qualifications required for admission in to the course.
- To prepare/ revise panel of paper setters and examiners for valuation, practical and viva-voce.
- To prepare model question papers for the course.

The Chairman of the BOS is authorized to convene the meeting either in offline or online mode as when required.



**Principal**

Mary Matha Arts & Science College  
P. O. Vemom, Mananthavady 670645



**PG & Research Department of Mathematics**  
**MARY MATHA ARTS & SCIENCE COLLEGE**  
**MANANTHAVADY**

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[www.marymathacollege.ac.in](http://www.marymathacollege.ac.in), [mmcmntdv@gmail.com](mailto:mmcmntdv@gmail.com)

**"CCMATLB21: LaTeX for Beginners"**

**CONSTITUTION OF THE BOARD OF STUDIES**

Board of Studies: Board of Studies shall consist of the following members:

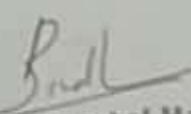
- The Chairperson of the Board of Studies who shall be appointed by the Principal from the Department of Mathematics.
- Experts of the subject concerned from in and outside the University to be appointed by the Principal.

Functions of The Board of Studies: The following shall be the functions of the Board of Studies:

- To frame and revise as frequently as necessary the syllabus of the subject concerned shall be the main function of the Board of Studies.
- To recommend to the rules, regulations and minimum qualifications required for admission into subject/course concerned.
- To prepare/revise panels of paper setters and examiners for valuation, practical and viva-voce.
- To prepare model question papers for the subject concerned as and when there is a revision of syllabus.

Board of studies members

Sl. No	Name	Designation
1	Dr Bindhu K Thomas	Assistant Professor & Chairman Board of Studies, Mary Matha Arts & Science College, Mananthavady.
2	Mr Binoy Joseph	Assistant Professor, Member Mary Matha Arts & Science College, Mananthavady.
3	Ms Jimly Manual	Assistant Professor, External Expert, M G College, Iritty, Kannur University.

  
Head, Department of Mathematics  
Mary Matha Arts & Science College  
Mananthavady  
Date: \_\_\_\_\_





**PG & Research Department of Mathematics  
MARY MATHA ARTS & SCIENCE COLLEGE  
MANANTHAVADY**

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**Minutes of the Board of Studies for Certificate Course held on 27<sup>th</sup> June 2021  
at the Department in online mode.**

**Agenda**


1. To approve the title of a new certificate course in the department
2. Approval of the syllabus submitted by the coordinator
3. Finalization of the schedule of the course to be conducted
4. Format of the examination

**Decisions taken**

1. Decided to conduct the certificate course with title: **LaTeX for Beginners (Code No. CCMATLB21)**
2. The syllabus submitted by the coordinator Dr Bindhu K Thomas, comprising of 2 modules which needs 30 contact hours (12 hrs Theory and 18 hrs Practical) is approved.
3. It has been decided to commence the classes in the month of December 2021 and planning to complete the syllabus by the end of February 2022 and conduct an examination by first week of March 2022.
4. It has been decided to publish the results and distribute the certificate for the eligible candidates by the last week of March 2022.

**Members present**

1. Dr Bindhu K Thomas
2. Mr Binoy Joseph
3. Ms Jimly Manual

  
Head, Department of Mathematics  
Mary Matha Arts & Science College  
Vembanam - O.  
Mananthavady - 670645



**PG & Research Department of Mathematics**  
**MARY MATHA ARTS & SCIENCE COLLEGE**  
**MANANTHAVADY**  
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**APPLICATION FORM FOR CERTIFICATE COURSE**  
**"CCMATLB21: LaTeX for Beginners"**

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Name (in Block Letters) :

Address :

Phone No :

E-mail :

Department :

Semester :

Plus Two Mark and Percentage :

(Attach photocopy of mark list along  
with this application )

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**For office use only**

The application is verified and found correct.  
The candidate is eligible for admission to the course

Course Co-ordinator

HoD

Head, PG & Research Department of Mathematics  
Mary Matha Arts & Science College  
Mananthavady - 810618  
Vernam : 0



PG & Research Department of Mathematics  
**MARY MATHA ARTS & SCIENCE COLLEGE**  
**MANANTHAVADY**  
(Affiliated to Kannur University)

**CERTIFICATE COURSE SYLLABUS**  
**"CCMATLB21: LaTeX for Beginners"**

Course Code	Theory	Practical	Marks			
			Final Exam		Internal	Total
			Theory	Practical		
CCMATLB21	12Hrs	18 Hrs	10	30	10	50

Continuous Internal Assessment

Component	Weightage	Marks	Remark
Assignment	50%	5	A student has to submit one assignment
Test Paper	50%	5	A student has to appear for at least one written test
Total	100%	10	

A student has to secure 40% marks to pass each theory and practical

**COURSE OUTCOMES**

CO1	Learn installation of the software
CO2	Understand the use of LaTeX in typesetting
CO3	Learn basic structure of a LaTeX document
CO4	Understand the preamble of a document
CO5	Learn to include Title, Author, Date and Comments
CO6	Learn to bold, italics and underlining a content
CO7	Learn to add images, captions, creating list and tables
CO8	Understand different Mathematics environment and Learn to write mathematical expressions using different commands
CO9	Understand different types of packages
CO10	Learn to create a simple letter, research article or question paper using LaTeX

Head, Department of Mathematics  
Mary Matha Arts & Science College  
Mananthavady  
Kannur University





**PG & Research Department of Mathematics**  
**MARY MATHA ARTS & SCIENCE COLLEGE**  
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**Module 1** - What is LaTeX?, Why learn LaTeX?, Writing your first piece of LaTeX. The preamble of a document. Including title, author and date information. Adding comments. Bold, Italics and underlining. Adding Images. Captions, Labels and references. Creating list in LaTeX. Adding math to LaTeX. Different packages.

**(20 Hours)**

**Module 2** - Basic document structure. Abstract. Paragraphs and new lines. Chapters and sections. Creating tables. Adding borders. Adding table of contents.

**(10 Hours)**

1. 'LaTeX beginners Guide', 2<sup>nd</sup> Edition, Steffan Kotwitz, 2021.
2. 'A beginners guide to LaTeX', Chetan Shirore, 2015.
3. 'A short introduction to LaTeX', Ms. Firuza Karmali Aibara, 2019.
4. 'More Math into LaTeX', George Gratzer, 2007.

  
Head, Department of Mathematics,  
Mary Matha Arts & Science College

2021-22

Page No.
Date

Ref No: XIMT/02/2021

# Certificate Course CCMAT 2021 - Latin for Beginners

	21-11-21	15-12-21	16-12-21	05/01/22	07/01/22	21/01/22	11/2/22	25/2/22	11/3/22	21/3/22	Remark
1. Aniya Xavier	✓	a	✓	✓	✓	a	✓	✓	a	a	Passed
2. Gopakumshna	✓	✓	✓	✓	a	✓	✓	✓	✓	✓	"
3. Abhay Raj	✓	✓	✓	✓	✓	✓	a	✓	✓	a	—
4. Haripriya Jayadevan	✓	✓	✓	a	✓	a	✓	a	✓	✓	Passed
5. Samuel P Thomas	✓	✓	✓	✓	✓	✓	✓	a	✓	✓	Passed
6. Sayeeja Pious	✓	✓	a	✓	✓	✓	✓	✓	✓	✓	—
7. Shikha Thomas	✓	a	✓	✓	✓	✓	✓	✓	a	✓	Passed
8. Swethamol	✓	✓	✓	✓	✓	✓	✓	a	✓	a	Passed
9. Lemina	✓	✓	✓	✓	✓	a	✓	✓	✓	✓	Passed
10. Aleena Ganga Prasad	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Passed
11. Aksha Mariya Augustine	✓	✓	✓	✓	a	✓	✓	✓	a	✓	Passed
12. Vairidha	a	✓	✓	✓	✓	✓	a	a	✓	✓	Passed
13. Sena	✓	✓	✓	✓	✓	✓	✓	a	✓	✓	Passed
14. Rishna Shorin	✓	✓	a	✓	✓	✓	✓	✓	✓	✓	Passed
15. Anurag N. Babu	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—
16. Akshay	✓	✓	✓	a	✓	✓	✓	✓	✓	✓	Passed
17. Vignesh	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Passed

*Smile*

Head, Department of Mathematics  
Mary Math's H.S. & J.C. College

Mechanically - 675645






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**MARY MATHA ARTS & SCIENCE COLLEGE**  
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**“CCMATLB21: LaTeX for Beginners”**

List of Students Enrolled and Passed							
Sl No	Name	Marks Obtained				Status	Certificate Number
		Theory (10)	Practical (30)	Internal (10)	Total (50)		
1	Abhay Raj T R	5	0	8	13	-	
2	Aksha Mariya Augustine	8	25	10	43	Passed	CCMATLB21-01
3	Akshay K M	8	22	10	40	Passed	CCMATLB21-02
4	Anurag N Babu	6	0	9	15	-	
5	Diya Xavier	9	28	10	47	Passed	CCMATLB21-03
6	Femina P	9	28	10	47	Passed	CCMATLB21-04
7	Ganga Pramod	6	28	10	44	Passed	CCMATLB21-05
8	Gopu Krishna M	9	28	10	47	Passed	CCMATLB21-06
9	Haripriya Jayadevan	6	0	8	14	-	
10	Rishna Sherin	8	26	10	44	Passed	CCMATLB21-07
11	Samuel P Thomas	9	28	10	47	Passed	CCMATLB21-08
12	Sayoojya Pious	9	28	10	45	Passed	CCMATLB21-09
13	Shibin Thomas	6	0	10	16	-	
14	Sona Benny	8	26	10	44	Passed	CCMATLB21-10
15	Swethamol M	8	26	10	44	Passed	CCMATLB21-11
16	Vighnesh V	8	26	8	42	Passed	CCMATLB21-12
17	Vrindha V J	9	26	10	45	Passed	CCMATLB21-13

  
Head, Department of Mathematics  
Mary Matha Arts & Science College  
Vamom P. O.  
Mananthavady - 670645



**MARY MATHA ARTS AND SCIENCE COLLEGE**  
**MANANTHAVADY**

No. COMBILB.21-22

Vennam P.O., Mananthavady-570645, Kerala  
NAAC Re-accredited with B++ Grade, CGPA 2.85 (III Cycle)

**CERTIFICATE**

This is to certify that

DINA XAVIER


successfully completed the certificate course in

COMBILB.21 : LATEX FOR BEGINNERS

conducted by the Department of

MATHEMATICS

in the academic year 2021-22

  
Course Coordinator

  
Head of the Department

  
Principal



Digitally signed by M. M. Thomas, DN: cn=M. M. Thomas, o=Mary Matha Arts and Science College, ou=Mananthavady, email=mthomas@mmasc.edu.in, c=IN, date=2022.05.31, 17:04:00 +05'30'



**PG & Research Department of Mathematics**  
**MARY MATHA ARTS & SCIENCE COLLEGE**  
**MANANTHAVADY**  
(Affiliated to Kannur University)

**REPORT**  
**"CCMATLB21: LaTeX for Beginners"**

Department of Mathematics conducted a 30 hours certificate course (hybrid mode) on "CCMATLB21: LaTeX for Beginners" in the academic year 2021-2022. 17 students enrolled for the course and 13 students successfully completed the course. The study materials are shared through the whatsapp group and theory and practical sessions are engaged by Dr Bindhu K Thomas and Mr Binoy Joseph.

**Assessment Procedures**

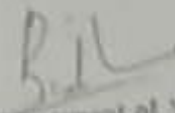
**Continuous Internal Assessment**

Component	Weightage	Marks	Remark
Assignment	50%	5	A student has to submit one assignment
Test Paper	50%	5	A student has to appear for at least one written test
Total	100%	10	

**Final Examination- Assessment**

Component	Mark	Remark
Theory	10	A student has to appear a Comprehensive Viva
Practical	30	A student has to prepare a Latex document and produce the corresponding PDF file with their name and register number.
Total	40	


**A student has to secure 40% marks to pass each theory and practical**

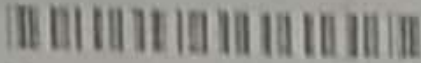
  
HEAD, Department of Mathematics,  
Mary Matha Arts & Science College,  
Mananthavady - 676515



## COURSE OUTCOMES

Students understood the installation of the software , basic structure of a LaTeX document, preamble of a document, learned to include Title, Author, Date and Comments in a document, studied to add images, captions, creating list and tables, understood different Mathematics environment and Learn to write mathematical expressions using different commands. Understood different types of packages. Learned to create a simple letter, research article or question paper using LaTeX.

  
Head, Department of Mathematics  
Mary Matha P. S. College, Ollur,  
Vannam - O.  
Mananthavady - 670646



0061358

K19U 2256

Reg. No. : .....

Name : .....

V Semester B.Sc. Degree (CBCSS- Reg./Sup./Imp.)

Examination, November-2019

(2014 Admn. Onwards)

Core Course in Mathematics

5B 07 MAT: Differential Equations, Laplace Transform and Fourier series

Time : 3 Hours

Max. Marks : 48

## SECTION - A

All the 4 questions are compulsory. They carry 1 mark each. (4×1=4)

1. Solve the differential equation  $y'' = x^{-4}$ .
2. Evaluate  $(D-2)(D+1)e^{2x}$
3. Find the Laplace transform of  $e^t \cosh 3t$
4. Show that if  $f(x)$  and  $g(x)$  have period  $p$ , then  $h = af + bg$ , where  $a$  and  $b$  are constants, has period  $p$ .

## SECTION - B

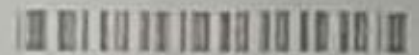
Answer any 8 questions among the questions 5 to 14. These questions carry 2 marks each. (8×2=16)

5. Show that  $2xy dx + x^2 dy = 0$  is exact and hence solve it.
6. Solve  $y' - y = e^{2x}$ .

Head, Department of Mathematics  
Maryatanki, J. K. 191005

P.T.O.

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7. Solve the boundary value problem  $y'' + y = 0$ ,  $y(0) = 3$ ,  $y(\pi) = -3$ .
8. Define the Wronskian of two solutions  $y_1, y_2$  of second order linear homogenous equation and find the Wronskian of  $e^x$  and  $xe^x$ .
9. Solve the non homogenous equation  $y'' + 4y = 8x^2$ .
10. Find a basis of solutions for  $x^2 y'' - xy' + y = 0$ , for positive  $x$ .
11. Define the unit step function and derive its Laplace transform.
12. State the convolution theorem and find the convolution of 1 and  $t$ .
13. Find the Fourier series of  $f(x) = x + \pi$  if  $-\pi < x < \pi$  and  $f(x + 2\pi) = f(x)$ .
14. State the Fourier convergence theorem.

### SECTION - C

Answer any 4 questions among the questions 15 to 20. These questions carry 4 marks each. (4×4=16)

15. Give an example of an initial value problem, which has more than one solution.
16. State and prove the superposition principle for the homogenous linear system.
17. Solve  $y'' + 10y' + 25y = e^{-5x}$ .
18. Factor  $p(D) = D^3 + D - 6$  and solve  $p(D)[y] = 0$ .
19. Find the inverse Laplace transform of  $F(s) = \frac{2}{s^3} - \frac{2e^{-2s}}{s^3} - \frac{4e^{-2s}}{s} + \frac{3e^{-4s}}{s^2 + 1}$ .