MAHATMA GANDHI UNIVERSITY

Kottayam, Kerala

Undergraduate Programmes (HONOURS)
2025 Admission Onwards

SYLLABUS						
SIGNATURE COURSE						
Name of the College	Bishop kurialacherry College for Women, Amalagiri					
Faculty/ Discipline	Mathematics					
Programme	BSc (Hons) Mathematics					
Course Coordinator	Dr. Nisha Mathew					
Contributors	Dr. Jinitha Varughese, Dr. Nisha Mathew					
Course Name	LaTeX for Scientific Documentation					
Type of Course	SEC					
Specialization title	This Signature Course does not have a specialization.					
Course Code	MG5SECMATA02					
Course Level	300					
Course Summary	The course emphasizes structured document creation, advanced mathematical typesetting, bibliography management and preparation of presentations. It equips students with the skills required to produce quality academic documents.					
Semester	5	**Credits**			3	**Total Hours**
Course Details	**Learning Approach**	Lecture	Tutorial	Practical	Others	
		3	0	0	0	45
Pre-requisites, if any	Basic computer literacy and Familiarity with mathematical notation.					

Course Outcomes (CO)

Number of COs		**4**	
CO No.	**Expected Course Outcome**	**Learning Domains ***	**PO No**
1	Understand basic LaTeX structure.	U	PO1, PO2, PO3, PO4, PO10
2	Apply LaTeX for mathematical typesetting using standard packages	A	PO1, PO2, PO3, PO4, PO10
3	Analyze and construct tables, figures	An	PO1, PO2, PO3, PO4, PO5, PO10
4	Develop scientific documents and presentations	S	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

CO-PO Articulation Matrix

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	2	1	2	-	-	-	-	-	2
CO 2	3	3	2	2	-	-	-	-	-	2
CO 3	3	3	2	2	1	-	-	-	-	2
CO 4	3	3	2	3	2	1	1	1	1	3

'0' is No Correlation, '1' is Slight Correlation (Low level), '2' is Moderate Correlation (Medium level) and '3' is Substantial Correlation (High level).

Course Content

Content for Classroom transaction (Units)

Module	Units	Course Description	Hrs	CO No.
1	Fundamentals of LaTeX and Document Structure			
	1.1	Introduction to LaTeX, installation and editors	3	["1"]
	1.2	Document structure, Document classes	4	["1"]
	1.3	Sectioning, Text formatting	4	["1"]
	1.4	Lists and environments, Defining commands	4	["1"]
2	Mathematical Typesetting and Floating Objects			
	2.1	Math mode, symbols and expressions	5	["2"]
	2.2	Fractions, Matrices, Equation alignment, Theorem environments	5	["2"]
	2.3	Tables, Figures, Floating objects	5	["3"]
3	Scientific Document Preparation and Presentation			
	3.1	Cross-referencing	5	["4"]
	3.2	Bibliography using BibTeX	5	["4"]
	3.3	Beamer presentations	5	["4"]

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** The course will be delivered through a blend of lectures and hands-on practice. Concepts are introduced using lecture-cum-demonstrations, followed by guided lab sessions where students create LaTeX documents. Interactive activities, problem-solving tasks, and peer discussions enhance understanding. Mini-project focus on real-world document preparation, including mathematical typesetting and presentations. Continuous feedback is provided to improve technical and writing skills. Self-learning is encouraged through online resources and practice exercises to develop proficiency in scientific document preparation.

Assessment Types	**MODE OF ASSESSMENT** Mode of Assessment: Theory **A. Continuous Comprehensive Assessment (CCA)** **• Theory – 25 Marks** Mini Project – 10 marks, Test -10 marks, Quiz- 5 marks, **B. End Semester Evaluation (ESE)** **• Theory – 50 Marks** Assessment Methods – Theory Examination Duration of Examination – 1.50 Hrs Pattern of examination for Theory – Non-MCQ Different parts of written examination – Part - A , B , C Answer Type: ◦ PART - A ◦ One or two Sentences - (5 out of 5) – 5 × 3 = 15 ◦ PART - B ◦ Short answer - (5 out of 7) – 5 × 5 = 25 ◦ PART - C ◦ Short Essays - (1 out of 2) – 1 × 10 = 10

References

- 1. Lamport, L. (1994). LaTeX: A Document Preparation System (2nd ed.). Addison-Wesley. 2. Goossens, M., Mittelbach, F., & Samarin, A. (1994). The LaTeX Companion. Addison-Wesley.

Suggested Readings

- 1. Kottwitz, S. (2011). LaTeX Beginner’s Guide. Packt Publishing. 2. Krishnan, E. (n.d.). LaTeX Tutorials: A Primer.

Affidavit

- We, Bishop kurialacherry College for Women, Amalagiri and Dr. Nisha Mathew, retain the copyright of this syllabus and expressly prohibit its distribution in complete form to any institution outside our own.
- We, Bishop kurialacherry College for Women, Amalagiri , agree to appoint a new course coordinator for the proposed LaTeX for Scientific Documentation in the event of the unavailability of the currently nominated coordinator. This appointment will ensure the continued coordination of course delivery, assessments, and all related academic responsibilities necessary for the successful implementation of the signature course, for as long as the college offers this programme.
- We, Bishop kurialacherry College for Women, Amalagiri and Dr. Nisha Mathew, declare that no part of this signature course submitted here for approval has been taken from the course content developed by, or from any of the course titles prepared by, the BoS/expert committee in the same discipline under our University.