

**UNIVERSITY OF MADRAS**  
**B.Sc. DEGREE PROGRAMME IN MATHEMATICS**  
**SYLLABUS WITH EFFECT FROM 2023-2024**

<b>Title of the Course</b>		<b>LATEX</b> <b>(Common to B.Sc Maths with Computer Applications)</b>					
<b>Paper Number</b>		<b>SKILL ENHANCEMENT COURSE III</b>					
<b>Category</b>	<b>SEC</b>	<b>Year</b>	I	<b>Credits</b>	2	<b>Course Code</b>	134S2C
		<b>Semester</b>	II				
<b>Instructional Hours per week</b>		<b>Lecture</b>	<b>Tutorial</b>	<b>Lab Practice</b>	<b>Total</b>		
		2	--	--	2		
<b>Pre-requisite</b>		12 <sup>th</sup> Standard Mathematics					
<b>Objectives of the Course</b>		<ul style="list-style-type: none"> <li>• To enable the students to acquire basic concepts of LaTeX</li> <li>• To get knowledge to prepare sample reports, sample articles, sample presentation and sample poster</li> </ul>					
<b>Course Outline</b>		<b>Unit I: Preamble :</b> Motivation - Running LaTeX - Resources – Basic LaTeX - Sample Document and Key Concepts - Type Style - Environments - Lists - Centering - Tables - Verbatim - Vertical and Horizontal Spacing <span style="float: right;"><b>Hours: 6</b></span>					
		<b>Unit II:</b> Typesetting Mathematics - Examples - Equation Environments - Fonts, Hats, and Underlining - Braces -Arrays and Matrices - Customized Commands -Theorem-like Environments – Math Miscellany - Math Styles - Bold Math - Symbols for Number Sets - Binomial Coefficient <span style="float: right;"><b>Hours: 6</b></span>					
		<b>Unit III: Further Essential LaTeX:</b> Document Classes and the Overall Structure - Titles for Documents - Sectioning Commands - Miscellaneous Extras - Spacing - Accented Characters – Dashes & Hyphens - Quotation Marks - Troubleshooting – Pinpointing the Error - Common Errors - Warning Messages <span style="float: right;"><b>Hours:6</b></span>					
		<b>Unit IV:</b> Packages - Inputting Files - Inputting Pictures - Making a Bibliography - Making an Index –Latex through the years <span style="float: right;"><b>Hours: 6</b></span>					
		<b>Unit V:</b> Sample Article –Sample Report – Sample presentation – Sample Poster – Internet Resources <span style="float: right;"><b>Hours: 6</b></span>					
<b>Extended Professional Component(is a part of internal component only, Not to be included in the External Examination question paper)</b>		<b>Total Hours: 30</b>					
		<p>Questions related to the above topics, from various competitive examinations UPSC / TNPSC / others to be solved</p> <p>(To be discussed during the Tutorial Hour)</p>					

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<b>Skills acquired from this course</b>	Knowledge, Problem Solving, Analytical Ability, Professional Competency, Professional Communication and Transferrable Skill
<b>Recommended Text</b>	Learning LaTeX : David F. Griffiths, Desmond J. Higham. - SIAM -Society for Industrial and Applied Mathematics, Philadelphia <b>Chapter 1 ,2,3,4 and 5</b>
<b>Reference Books</b>	<ol style="list-style-type: none"> <li>1. A Guide to LaTeX, Helmut Kopka Patrick W. Daly, Electronic Publishing (Fourth edition) © Addison Wesley Longman Limited 2004.</li> <li>2. LaTeX Tutorials, A PRIMER, Indian TEX Users Group, Trivandrum, India 2003 September</li> <li>3. LaTeX Beginner's Guide, Stefan Kottwitz, Published by Packt Publishing Ltd. 32 Lincoln road Olton, Birmingham, B27 6PA, UK</li> </ol>
<b>Website and e- Learning source</b>	<ol style="list-style-type: none"> <li>1. Overleaf: <a href="https://www.overleaf.com/">https://www.overleaf.com/</a></li> <li>2. ShareLaTeX: <a href="https://www.sharelatex.com/">https://www.sharelatex.com/</a></li> <li>3. LaTeX Wikibook: <a href="https://en.wikibooks.org/wiki/LaTeX">https://en.wikibooks.org/wiki/LaTeX</a></li> </ol>

**Course Learning Outcome (for Mapping with POs and PSOs)**

Students will be able to

**CLO 1:** Learn LaTeX.

**CLO 2:** Type setting Mathematics

**CLO 3:** Know the essential of LaTeX, Document Classes and the Overall Structure

**CLO 4:** Know the Packages, Inputting Files, Inputting Pictures, Making a Bibliography

**CLO 5:** Prepare the Sample Article, Sample Report, Sample presentation and Sample Poster

	POs						PSOs		
	1	2	3	4	5	6	1	2	3
CLO 1	3	3	1	3	1	-	3	1	1
CLO 2	3	3	1	3	1	-	3	1	1
CLO 3	3	3	1	3	1	-	3	1	1
CLO 4	3	3	1	3	1	-	3	1	1
CLO 5	3	3	1	3	1	-	3	1	1