

## Lecture Plan

**Name of the College:** Government College of Arts, Science and Commerce, Sanquelim-Goa

**Name of Faculty:** Aaron Alphonso

**Subject:** Mathematics

**Paper code:** MAT-625 LATEX for Mathematics

**Program:** M.Sc.

**Division:** -I

**Academic year:** 2024-25

**Semester:** III

**Total Lectures:** 60

**Course Objectives:** At the end of this course the student will develop the required skill set to typeset mathematical research and produce professional mathematical documents with vector graphics. The student will also be able to effectively use macros in LATEX.

**Expected Course Outcome:** On completion of this course the learner will be able to create professional mathematical documents, Prepare Beamer Presentations, Use graphics packages to draw in LATEX and design customized LATEX packages.

**Student Learning Outcome:** Student will be able to

1. Gain the required knowledge to type professional mathematical documents
2. prepare presentations.
3. Apply graphics packages to produce vector graphics in mathematical documents.
4. Design customized LATEX packages to suit individual needs with effective use of Fonts, Colours etc

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	18/06/2024	22/06/2024	4	<b>LATEX Basics:</b> Some history, basics, Latex input files		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	24/06/2024	29/06/2024	4	<b>LATEX Basics:</b> Input file structure, A command line session, Some basic packages		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
July	01/07/2024	06/07/2024	4	<b>Real World LATEX:</b> Line breaking, page breaking, Dashes and hyphens Slash, Ellipsis,  Ligatures, Abstract, Simple Commands, The Space Between  Words, Titles, Chapters, and Sections, Cross References,		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022

	08/07/2024	13/07/2024	4	Real World LATEX: Footnotes, Lists, Non-Justified Text, Quotations, Code Listings, Tables, Including Graphics and Images, Floating Bodies, Big Projects		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	15/07/2024	20/07/2024	4	<b>Typesetting Mathematical Formulae:</b> Equations, Big operators, Other building blocks of mathematical formulae		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	22/07/2024	27/07/2024	4	<b>Typesetting Mathematical Formulae:</b> Theorems and Proofs, Fiddling with math styles, dots, more on fractions.		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
July August	29/07/2024	03/08/2024	4	<b>Bibliographies:</b> thebibliography environment, biblatex, citing commands		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
August	05/08/2024	10/08/2024	4	<b>Specialities:</b> Indexing, Installing Extra		Latex,	Tobias Oetiker, Marcin Serwin, Hubert Partl,

				Packages, LATEXand PDF, ,Creating Presentations		Smart Board	Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	12/08/2024	17/08/2024	4	<b>Graphics in Your Document:</b> Overview, Basic Usage, Curves and Shapes		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	19/08/2024	24/08/2024	4	<b>Graphics in Your Document:</b> Customizing Paths and Nodes		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	26/08/2024	31/08/2024	4	<b>Graphics in Your Document:</b> Coordinates, Reusing Pictures, Libraries		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
September	02/09/2024	07/09/2024	2	<b>Customising LATEX:</b> New Command, New Environment		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022

	09/09/2024	14/09/2024	2	<b>Customising LATEX:</b> Creating your own package,		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	16/09/2024	21/09/2024	4	<b>Customising LATEX:</b> Custom Fonts with fontspec		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
	23/09/2024	28/09/2024	4	<b>Customising LATEX:</b> Colours, Defining your own colours		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
September October	30/09/2024	05/10/2024	3	<b>Customising LATEX:</b> Lengths and Spacing, The Layout of the Document		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022
October	07/10/2024	12/10/2024	1	<b>Customising LATEX:</b> Fancy Headers, Boxes, Rules		Latex, Smart Board	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short

							Introduction to LATEX, 2022
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**\* Assessment Rubrics**

Component	Max Marks
ISA 1	10
ISA 2	10
ISA 3	10
ISA 4	10
Semester End Exam	20