

Lecture Plan		
Name of the College: Government College of Arts, Science and Commerce, Sanquelim-Goa		
Name of Faculty: Brian D’Souza	Subject: Mathematics	
Paper code: MAT-6401 Mathematical Typesetting using LaTeX	Program: M.Sc. Mathematics	Division: -
Academic year: 2026-27	Semester: III	Total Lectures: 60 (Practical)
Course Objectives: 1. To introduce the foundational concepts of Mathematical Typesetting using LaTeX, fostering a strong theoretical understanding of their definitions and properties. 2. To develop the learner's ability to construct and understand key Mathematical Typesetting using LaTeX concepts and practical techniques. 3. To equip learners with the skills necessary to identify and apply appropriate Mathematical Typesetting using LaTeX methods and techniques to solve structured problems. 4. To encourage analytical thinking and creativity in solving unfamiliar problems in Mathematical Typesetting using LaTeX, enabling learners to construct logically sound and precise documents.		
Expected Course Outcome: 1) Display familiarity and knowledge of Mathematical Typesetting using LaTeX and associated concepts. 2) Demonstrate their skill in Mathematical Typesetting using LaTeX. 3) Choose the appropriate procedures, modify them if needed and apply them to solve method-based problems in Mathematical Typesetting using LaTeX. 4) Analyze and select appropriate commands and methods for Mathematical Typesetting using LaTeX and present mathematically precise arguments to justify their solutions. 5) Prove various results in Riemann integration. 6) Analyze and compare various number theoretic functions.		

7) Examine the convergence of improper integrals.							
Student Learning Outcome: Student will be able to 1) Have the skill to typeset structured mathematical documents, including equations, tables, bibliographies, and graphics, using LaTeX. 2) Apply LaTeX customization techniques (commands, packages, fonts, and layout) to prepare professional-quality academic documents. 3) Apply the theory of Riemann integration in evaluating integrals.							
Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	22/06/2026	27/06/2026	4	LaTeX Basics: a bit of history; basics; LaTeX input files; input file structure		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
	29/06/2026	04/07/2026	4	A typical command-line session; logical structure of a document; packages; structure of text and language; files you might encounter		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
July	06/07/2026	11/07/2026	4	Real World LaTeX: line breaking and page breaking; ready-made strings; dashes, hyphens, slashes, ellipsis, ligatures		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short

						Introduction to LaTeX, 2022.
	13/07/2026	18/07/2026	4	Titles, chapters and sections; cross references; footnotes; lists; non-justified text; quotations; code listings; tables; including graphics and images; floating bodies; big projects	Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
	20/07/2026	25/07/2026	4	Typesetting Mathematical Formulae: single equations; building blocks for mathematical formulae; multiline equations	Computer Lab	George Grätzer, More Math Into LaTeX, Springer, 2016.
Jul/Aug	27/07/2026	01/08/2026	4	Units; matrices and the like; spacing in math mode; theorems and proofs; fiddling with math styles; dots; more about fractions	Computer Lab	George Grätzer, More Math Into LaTeX, Springer, 2016.
August	03/08/2026	08/08/2026	4	Bibliographies: the bibliography environment; biblatex with biber database files; using biblatex; controlling the bibliography; citing commands; more about entries	Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
	10/08/2026	15/08/2026	4	Specialties: indexing; installing extra packages; LaTeX and PDF; creating presentations	Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.

	17/08/2026	22/08/2026	4	Graphics in Your Document: overview; basic usage		Computer Lab	Leslie Lamport, A Documentation Preparation System LaTeX User's Guide and Reference Manual, Pearson, 2006.
	24/08/2026	29/08/2026	4	Curves and shapes; customizing paths and nodes		Computer Lab	Leslie Lamport, A Documentation Preparation System LaTeX User's Guide and Reference Manual, Pearson, 2006.
August/Sep t	31/08/2026	05/09/2026	4	Coordinates; reusing pictures; libraries		Computer Lab	Leslie Lamport, A Documentation Preparation System LaTeX User's Guide and Reference Manual, Pearson, 2006.
Sep	07/09/2026	12/09/2026	4	Customising LaTeX: new commands, environments and packages		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
	14/09/2026	19/09/2026	0	Ganesh Chaturthi Break (14–19 Sep)			
	21/09/2026	26/09/2026	4	Fonts and sizes; custom fonts with fontspec; colours		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The

							Not So Short Introduction to LaTeX, 2022.
Sep/Oct	28/09/2026	03/10/2026	4	Lengths and spacing; the layout of the document		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
Oct	05/10/2026	10/10/2026	2	Fancy headers		Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.
	12/10/2026	14/10/2026	2	Review and hands-on project: compiling a complete formatted document with bibliography, graphics, and custom styling	Practical project submission	Computer Lab	Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LaTeX, 2022.

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5

Mid Point Exam	15
ISA 2	7.5
Practical	Nil
Project	Nil
Semester End Exam	20