ADD-ON COURSES

Title of the Course	**:**	**Introduction to LaTeX for Academic Writing**
Course Code	**:**	**MTHADD 1.2**
Nature of the Course	**:**	**ADD-ON Course**
Total Credits	**:**	**02 (L=1, T=1, P=2)**
Distribution of Marks	**:**	**35 (End Sem) + 15 (In-Sem)**

Course Objectives: The objectives of this Course are-

- Understand the basic structure of LaTeX documents.
- Be able to create well-structured and formatted academic texts.
- Learn to include figures, tables, and mathematical equations in their documents.
- Manage bibliographies and citations using BibTeX.

UNITS	CONTENTS	L	T	P	Total Hours
I (5 Marks)	History and philosophy of LaTeX; Installation of LaTeX distributions (TeX Live, MiKTeX); Choosing an editor (Overleaf, TeXstudio, TeXmaker); Creating the first document; The structure of a LaTeX file; Compiling documents to PDF.	01	01	02	04
II (5 Marks)	Basic document classes (article, report, book); Title, author, and date; Sectioning and nesting; Text formatting (bold, italic, underline); Lists (itemize, enumerate, description); Special characters and escaping.	01	01	04	06
III (5 Marks)	Creating tables with tabular; Table captions and labels; Including graphics with the graphicx package; Figure floats; Cross-referencing sections, figures, and tables; Using footnotes.	01	01	04	06
IV (5 Marks)	Inline and displayed equations; Common mathematical symbols; Fractions, matrices, and multilined equations; Using AMS-LaTeX packages for advanced math typesetting; Theorems, lemmas, and proofs.	01	01	04	06
V (5 Marks)	Introduction to BibTeX; Creating a bibliography database; Citing works in your document; Bibliography styles; Integrating BibTeX with LaTeX documents; Using Natbib and BibLaTeX for advanced bibliography management.	01	01	04	06
VI (5 Marks)	Modifying page layout (margins, spacing); Customizing headers and footers with fancyhdr; Defining new commands and environments; Using packages to enhance LaTeX documents (geometry, hyperref).	01	01	02	04

VII (5 Marks)	Creating presentations with Beamer; Drafting posters with TikZ and pgfplots; Introduction to writing classes and packages; Tips for managing large documents (include, input).	01	01	02	04
	Total	**07**	**07**	**18**	**32**

Where, L: Lectures T: Tutorials P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: (15 Marks)

- One Internal Examination - **10 Marks**
- Others (any one or more) - **05 Marks**
  - Seminar presentation on any of the relevant topics
  - Assignment
  - Group Discussion
  - Quiz
  - Viva-Voce

LEARNING OUTCOMES:

After the completion of this course, the learner will be able to:

- Write and compile LaTeX documents.
- Customize document layouts and styles.
- Insert and format mathematical content and figures.
- Automate bibliography management.

SUGGESTED READINGS:

- Leslie Lamport, "LaTeX: A Document Preparation System", 2nd Edition, 1994, Addison-Wesley.
- Frank Mittelbach and Michel Goossens, "The LaTeX Companion", 2nd Edition, 2004, Addison-Wesley.
- George Grätzer, "More Math Into LaTeX", 5th Edition, 2016, Springer.