

# INTERNSHIP PROGRAMME FOR UG DEGREE (SEMESTER-V)

*(For the students admitted under New Curriculum and Credit Framework from the academic session 2023-24)*



Course Title: LaTeX	
Internship Providing Organization (IPO):	Department of Mathematics, Bankura Sammilani College
Category of Course:	For UG DEGREE (SEM-V)
Duration:	60 Hours
Course Coordinator and Contact Details:	Dr. Samiran Karmakar Mob: 9474189456
Mentors:	Dr. Swapan Mukhopadhyay Dr. Utpal Badyakar Dr. Mridula Sarkar Mr. Uttam Kumar Mahanti
Intake Capacity:	65 Students
Course Fees:	Rs. 100/- (Students from Host Institution) Rs. 400/- (Students from Other Institution)

# **SYLLABUS**

**Course Title: LaTeX**  
**[50 Marks/2 Credits/60 Hours]**

## **Learning Outcomes (LO)**

- Hone the skill of using high-quality typesetting system, LaTeX for publication of research papers, theses and book chapters.
- Typesetting of complex mathematical formulae using LaTeX.
- Create Tables, Graphics and Pictures Lists, Arrays and Bibliography by using LaTeX.
- Create Slides with Beamers and posters.

### **Unit-I: Installation of LaTeX (Theory + Practical)**

**[10 hrs]**

- i) Introduction to LaTeX.
- ii) Installation of Kile and Miktex.
- iii) Class and Packages.
- iv) Latex programming and commands, sample packages.
- v) Error messages: Some sample errors, list of LaTeX error messages.

### **Unit-II: Formatting of output document (Theory + Practical)**

**[20 hrs]**

- i) Fonts, symbols, indenting, paragraphs, line breaking, page breaking, word spacing, titles and subtitles.
- ii) Document class, page style, parts of the documents, table of contents.
- iii) Command names and arguments, environments, declarations.

### **Unit-III: Mathematical Formulae (Theory + Practical)**

**[20 hrs]**

- i) Mathematical environments, Math mode, Mathematical Symbols.
- ii) Graphics packages, multivalued functions, drawing matrices.
- iii) Inserting pictures and tables.
- iv) Citation in LaTeX using BibTeX. Creating reference database as .bib file

### **Unit-IV: Overleaf: An Online LaTeX Editor (Theory + Practical)**

**[10 hrs]**

- i) Introduce Overleaf: An online LaTeX editor. Basic knowledge about online editors.
- ii) Advantages of online editors over other LaTeX editing software along with Kile and Miktex.
- iii) Creating online account on Overleaf and doing collaborative works.

**References:**

- i) Leslie Lamport, *A Document Preparation System LaTeX*, Addison Wesley Publishing Company, 2<sup>nd</sup> Edition.
- ii) Helmut Kopka, Patrick W. Daly, *A Guide to LaTeX and Electronic Publishing*, Addison Wesley Longman Limited, 4<sup>th</sup> Edition, England, 2004.
- iii) Suman Bandyopadhyaya, *Walking with LaTeX*, Techno World, 2<sup>nd</sup> Edition, Kolkata, 2021.
- iv) T. Oetiker, M. Serwin, H. Partl, I. Hyna, E. Schlegl, *The not so short Introduction to LaTeX*.
- v) Dilip Datta, *LaTeX in 24 Hours*, Springer.