

|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------|
| Lecture Plan                                                                                                                                                                                                                                                                                                                                                                                                                 |                                        |                    |
| Name of the College: Government College of Arts, Science and Commerce, Sanquelim-Goa                                                                                                                                                                                                                                                                                                                                         |                                        |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
| Name of Faculty: Alisha Teli                                                                                                                                                                                                                                                                                                                                                                                                 | Subject: Mathematics                   |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
| Paper code: MAT 625 Latex for Mathematics                                                                                                                                                                                                                                                                                                                                                                                    | Program: <a href="#">M.Sc.</a> Part II | Division: -        |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
| Academic year: 2025-26                                                                                                                                                                                                                                                                                                                                                                                                       | Semester: III                          | Total Lectures: 42 |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
| <b>Course Objectives:</b><br>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.                                                                                                                                              |                                        |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
| <b>Expected Course Outcome:</b> 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.                                                                                                                                                                              |                                        |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |
| <b>Student Learning Outcome:</b> Student will be able to <ol style="list-style-type: none"><li>1. Gain the required knowledge to type professional mathematical documents</li><li>2. Prepare presentations.</li><li>3. Apply graphics packages to produce vector graphics in mathematical documents.</li><li>4. Design customized LATEX packages to suit individual needs with effective use of Fonts, Colours etc</li></ol> |                                        |                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                    |

| Month  | Lecture From | Lecture To | No. of lectures allotted | Topic, Subtopic to be covered                                                                                         | Exercise/ Assignment | ICT Tools          | Reference books                                                                                                             |
|--------|--------------|------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| July   | 30/07/2025   | 30/07/2025 | 2                        | <b>Typesetting Mathematical Formulae:</b><br>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 |
| August | 04/08/2025   | 09/08/2025 | 4                        | 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 |
|        | 11/08/2025   | 16/08/2025 | 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 |
|        | 18/08/2025   | 23/08/2025 | 4                        | <b>Specialities:</b> Indexing, Installing Extra, Packages, LATEX and PDF, ,Creating Presentations                     |                      | Latex, Smart Board | Tobias Oetiker, Marcin Serwin, Hubert Partl, Irene Hyna and Elisabeth Schlegl, The Not So Short Introduction to LATEX, 2022 |

|                  |            |            |                    |                                                                                      |  |                    |                                                                                                                             |
|------------------|------------|------------|--------------------|--------------------------------------------------------------------------------------|--|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| August           | 26/08/2025 | 01/09/2025 | Chaturthi<br>Break |                                                                                      |  |                    |                                                                                                                             |
| September        | 02/09/2025 | 06/09/2025 | 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 |
|                  | 08/29/2025 | 13/09/2025 | 4                  | 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 |
|                  | 15/09/2025 | 20/09/2025 | 4                  | 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 |
|                  | 22/09/2025 | 27/09/2025 | 4                  | <b>Customising LATEX:</b> New Command, New Environment<br>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 |
| September<br>Oct | 29/09/2025 | 04/10/2254 | 4                  | Custom Fonts with fontspec. 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                                              |
|  | 06/10/2025 | 11/10/2025 | 4 | 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 |
|  | 13/10/2025 | 18/10/2025 | 4 | 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 |
|  |            |            |   |                                                 |  |                    |                                                                                                                             |

**\* Assessment Rubrics**

| Component | Max Marks |
|-----------|-----------|
| ISA 1     | 10        |
| ISA 2     | 10        |
| ISA 3     | 10        |
| ISA 4     | 10        |

|                      |     |
|----------------------|-----|
| Project              | Nil |
| Semester End<br>Exam | 20  |