

Technical Writing using LaTeX			Semester	4																												
Course Code	BCS456D		CIE Marks	50																												
Teaching Hours/Week (L: T:P: S)	0:0:2:0		SEE Marks	50																												
Credits	01		Exam Hours	02																												
Examination type (SEE)	Practical																															
Course objectives:																																
<ul style="list-style-type: none"> ● To introduce the basic syntax and semantics of the LaTeX scripting language ● To understand the presentation of tables and figures in the document ● To illustrate the LaTeX syntax to represent the theorems and mathematical equations ● To make use of the libraries (Tikz, algorithm) to design the diagram and algorithms in the document 																																
Sl.NO	Experiments																															
1	Develop a LaTeX script to create a simple document that consists of 2 sections [Section1, Section2], and a paragraph with dummy text in each section. And also include header [title of document] and footer [institute name, page number] in the document.																															
2	Develop a LaTeX script to create a document that displays the sample Abstract/Summary																															
3	Develop a LaTeX script to create a simple title page of the VTU project Report [Use suitable Logos and text formatting]																															
4	Develop a LaTeX script to create the Certificate Page of the Report [Use suitable commands to leave the blank spaces for user entry]																															
5	Develop a LaTeX script to create a document that contains the following table with proper labels.																															
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">S.No</th> <th rowspan="2">USN</th> <th rowspan="2">Student Name</th> <th colspan="3">Marks</th> </tr> <tr> <th>Subject1</th> <th>Subject2</th> <th>Subject3</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4XX22XX001</td> <td>Name 1</td> <td>89</td> <td>60</td> <td>90</td> </tr> <tr> <td>2</td> <td>4XX22XX002</td> <td>Name 2</td> <td>78</td> <td>45</td> <td>98</td> </tr> <tr> <td>3</td> <td>4XX22XX003</td> <td>Name 3</td> <td>67</td> <td>55</td> <td>59</td> </tr> </tbody> </table>					S.No	USN	Student Name	Marks			Subject1	Subject2	Subject3	1	4XX22XX001	Name 1	89	60	90	2	4XX22XX002	Name 2	78	45	98	3	4XX22XX003	Name 3	67	55	59
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3	4XX22XX003	Name 3	67	55	59																											
6	Develop a LaTeX script to include the side-by-side graphics/pictures/figures in the document by using the subgraph concept																															
7	Develop a LaTeX script to create a document that consists of the following two mathematical equations																															
	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $= \frac{-2 \pm \sqrt{2^2 - 4*(1)*(-8)}}{2*1}$ $= \frac{-2 \pm \sqrt{4+32}}{2}$																															
	$\varphi_{\sigma}^{\lambda} A_t = \sum_{\pi \in C_t} \text{sgn}(\pi) \varphi_{\sigma}^{\lambda} \varphi_{\pi}^{\lambda}$ $= \sum_{\tau \in C_{\sigma t}} \text{sgn}(\sigma^{-1} \tau \sigma) \varphi_{\sigma}^{\lambda} \varphi_{\sigma^{-1} \tau \sigma}^{\lambda}$ $= A_{\sigma t} \varphi_{\sigma}^{\lambda}$																															

8	Develop a LaTeX script to demonstrate the presentation of Numbered theorems, definitions, corollaries, and lemmas in the document
9	Develop a LaTeX script to create a document that consists of two paragraphs with a minimum of 10 citations in it and display the reference in the section
10	Develop a LaTeX script to design a simple tree diagram or hierarchical structure in the document with appropriate labels using the Tikz library
11	Develop a LaTeX script to present an algorithm in the document using algorithm/algorithmic/algorithm2e library
12	Develop a LaTeX script to create a simple report and article by using suitable commands and formats of user choice.
<p>Course outcomes (Course Skill Set): At the end of the course, the student will be able to:</p> <ul style="list-style-type: none"> • Apply basic LaTeX command to develop simple document • Develop LaTeX script to present the tables and figures in the document • Illustrate LaTeX script to present theorems and mathematical equations in the document • Develop programs to generate the complete report with citations and a bibliography • Illustrate the use of Tikz and algorithm libraries to design graphics and algorithms in the document 	
<p>Suggested Learning Resources:</p> <ul style="list-style-type: none"> • BOOK: A Short Introduction to LaTeX BY FIRUZA KARMALI (AIBARA), A book for beginners, 2019 • BOOK: Formatting Information: A Beginner's Introduction to Typesetting with LaTeX, BY PETER FLYNN, Comprehensive TeX Archive Network (2005) • LaTeX TUTORIAL: [https://latex-tutorial.com/tutorials/] • LaTeX TUTORIAL: [https://www.javatpoint.com/latex] 	