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| **Sl. No** | **Syllabus** | **Curriculum** | **Deployment Strategy and**  **Tool** | **Cross-cutting issues**  **integrated** | **PO, PSO and CO** | **Attainment Verification** |
| 1. | Formal Languages & Automata Theory | 1. Formal Languages and Automata theory presents the theoretical aspects of computer science, and helps define infinite languages in finite ways; construct algorithms for related problems and decide whether a string is in language or not. 2. Each model in automata theory plays important roles in several applied areas. Finite automata are used in text processing, compilers, and hardware design. Context-free grammar (CFGs) are used in programming languages and artificial intelligence. 3. Automatic photo printing machines, artificial card punching machine, human detection and reorganization machine etc. are the real time examples of automata. | 1. Chalk and   Talk method   1. PPT | * Business   Ethics   * Human   values | PO1:Engineering Knowledge  PO2:Problem Analysis  PO3:Design/Development Of Solutions |  |
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|  |  | PSO2:Problem Solving Skill |
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|  |  | **CO1** : Analyze abstract mathematical model of computing like DFA, NFA, Epsilon NFA and Turing Machines.  **CO2** : Apply the concept of regular expressions and automata in construction of programming languages.  **CO3** : Determine the type of languages using closure properties of RL, CFL and pumping lemma.  **CO4** : Design CFG and Context–Sensitive grammar for different language classes.  **CO5** : Design PDA and Turing machine to solve problems for which there is no algorithmic solution.  **CO6**: Demonstrate decidable and decidable problems of computing. |
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