

| AIET                                                        | Lesson Plan & Execution |                                       |                        | Format No.<br>Issue No.<br>Rev. No.   | ACD 08<br>01<br>00 |                          |
|-------------------------------------------------------------|-------------------------|---------------------------------------|------------------------|---------------------------------------|--------------------|--------------------------|
| Name of the faculty                                         |                         | Dr. Sudheer Shetty                    |                        |                                       |                    |                          |
| Semester and Section                                        |                         | V ISE                                 |                        |                                       |                    |                          |
| Date of Commencement                                        |                         | 25/11/2022                            |                        |                                       |                    |                          |
| Last Working Day of the Semester                            |                         | 09/03/2024                            |                        |                                       |                    |                          |
| Source Materials List                                       |                         |                                       |                        |                                       |                    |                          |
| ① "Introduction to Automata Theory, Language & Computation" |                         |                                       |                        |                                       |                    |                          |
| 1. by Hopcroft & Ullman                                     |                         |                                       |                        |                                       |                    |                          |
| ② "Compiler - Principle, Techniques and Tools"              |                         |                                       |                        |                                       |                    |                          |
| 1. by Aho & Ullman                                          |                         |                                       |                        |                                       |                    |                          |
| 2.                                                          |                         |                                       |                        |                                       |                    |                          |
| Subject Name                                                |                         |                                       |                        |                                       |                    |                          |
| Period                                                      | Plan                    |                                       |                        | Execution                             |                    |                          |
|                                                             | Date                    | Topics to be covered                  | Source Material needed | Topics Covered                        | Date               | Source Material Referred |
| 1                                                           | 9/12                    | Introduction to Automata Theory       | 1                      | Introduction to Automata Theory       | 07/12              | 1                        |
| 2                                                           | 9/12                    | Central Concepts of Automata Theory   | 1                      | Central Concepts of Automata Theory   | 07/12              | 1                        |
| 3                                                           | 11/12                   | Languages, Strings, Power of Alphabet | 1                      | Languages, Strings, Power of Alphabet | 8/12               | 1                        |
| 4                                                           | 11/12                   | Deterministic Finite Automata (DFA)   | 1                      | Deterministic Finite Automata (DFA)   | 8/12               | 1                        |



| Period | Plan  |                                         |                        | Execution                               |       |                          |
|--------|-------|-----------------------------------------|------------------------|-----------------------------------------|-------|--------------------------|
|        | Date  | Topics to be covered                    | Source Material needed | Topics Covered                          | Date  | Source Material Referred |
| 5      | 12/12 | Design of DFA                           | 1                      | Design of DFA                           | 9/12  | 1                        |
| 6      | 13/12 | Design of DFA (Contd..)                 | 1                      | Design of DFA (Contd..)                 | 9/12  | 1                        |
| 7      | 16/12 | Non-deterministic Finite Automata (NFA) | 1                      | Design of DFA (Contd..)                 | 11/12 | 1                        |
| 8      | 16/12 | Design of NFA's, E-NFA                  | 1                      | Design of DFA (Contd..)                 | 11/12 | 1                        |
| 9      | 18/12 | NFA to DFA Conversion                   | 1                      | Non-deterministic Finite Automata (NFA) | 11/12 | 1                        |
| 10     | 18/12 | Minimization of DFA                     | 1                      | Design of NFA's, E-NFA                  | 12/12 | 1                        |
| 11     | 19/12 | Introduction to Compiler Design         | 2                      | NFA to DFA Conversion                   | 12/12 | 1                        |
| 12     | 20/12 | Phases of Compiler                      | 2                      | Minimization of DFA                     | 13/12 | 1                        |
| 13     | 23/12 | Introduction to Regular Expression      | 1                      | Introduction to Compiler Design         | 15/12 | 2                        |
| 14     | 23/12 | Writing RE's to Languages               | 1                      | Phases of Compiler                      | 15/12 | 2                        |
| 15     | 26/12 | Writing RE's (Contd..)                  | 1                      | Introduction to RE                      | 16/12 | 1                        |
| 16     | 27/12 | Converting FA to RE's                   | 1                      | Writing RE's to Languages               | 16/12 | 1                        |
| 17     | 30/12 | Converting RE's to FA                   | 1                      | Writing RE's (Contd..)                  | 18/12 | 1                        |



| Period | Plan  |                                       |                        | Execution                           |       |                          |
|--------|-------|---------------------------------------|------------------------|-------------------------------------|-------|--------------------------|
|        | Date  | Topics to be covered                  | Source Material needed | Topics Covered                      | Date  | Source Material Referred |
| 18     | 30/12 | Pumping Lemmas for RL                 | 1                      | Converting FA to RL                 | 18/12 | 1                        |
| 19     | 06/1  | Proving Languages not to be regular   | 1                      | Converting FA to RL                 | 18/12 | 1                        |
| 20     | 06/1  | Problems on Pumping Lemmas            | 1                      | Converting RL to FA                 | 18/12 | 1                        |
| 21     | 8/1   | Role of Lexical Analyser              | 2                      | Pumping Lemmas for RL               | 19/12 | 1                        |
| 22     | 8/1   | Input Buffering                       | 2                      | Proving Languages not to be regular | 19/12 | 1                        |
| 23     | 9/1   | Specification of Tokens               | 2                      | Problems on Pumping Lemmas          | 20/12 | 1                        |
| 24     | 10/1  | Recognition of Tokens                 | 2                      | Role of Lexical Analyser            | 21/12 | 2                        |
| 25     | 13/1  | Introduction to Context-Free Grammars | 1                      | Input Buffering                     | 22/12 | 2                        |
| 26     | 13/1  | Designing CFG for Grammars            | 1                      | Specification of Tokens             | 23/12 | 2                        |
| 27     | 16/1  | Designing CFG (Contd.)                | 1                      | Recognition of Tokens               | 23/12 | 2                        |
| 28     | 17/1  | Derivation using Grammars             | 1                      | Introduction to CFG                 | 26/12 | 1                        |
| 29     | 20/1  | LMD, RMD and Parse Trees              | 1                      | Designing CFG for Grammars          | 26/12 | 1                        |
| 30     | 20/1  | Ambiguity and Eliminating it          | 1                      | Designing CFG (Contd.)              | 27/12 | 1                        |



| Period | Plan  |                                      |                        | Execution                        |       |                          |
|--------|-------|--------------------------------------|------------------------|----------------------------------|-------|--------------------------|
|        | Date  | Topics to be covered                 | Source Material needed | Topics Covered                   | Date  | Source Material Referred |
| 31     | 22/11 | Ambiguous gram<br>mar (Contd-)       | 1                      | Derivation<br>from grammars      | 27/12 | 1                        |
| 32     | 22/11 | Elimination of<br>Left Recursion     | 2                      | LMD, RMD<br>and parentheses      | 28/12 | 1                        |
| 33     | 23/11 | Left Factoring                       | 2                      | Ambiguity and<br>Elimination     | 28/12 | 1                        |
| 34     | 24/11 | Syntax Analysis<br>phase of Compiler | 2                      | Ambiguous<br>grammars<br>(Contd) | 29/12 | 1                        |
| 35     | 27/11 | Design of Parser                     | 2                      | Elimination of<br>Left recursion | 29/12 | 2                        |
| 36     | 27/11 | Top-down<br>parsing                  | 2                      | Left factoring                   | 29/12 | 2                        |
| 37     | 29/11 | Introduction<br>to PDA               | 1                      | Syntax Analysis<br>of Compiler   | 30/12 | 2                        |
| 38     | 29/11 | Definition of<br>PDA's               | 1                      | Design of<br>Parser              | 30/12 | 2                        |
| 39     | 30/11 | Language of<br>PDA                   | 1                      | Top-down<br>Parsing              | 4/1   | 2                        |
| 40     | 31/11 | Designing<br>PDA's                   | 1                      | Top-down<br>Parsing (Contd)      | 4/1   | 2                        |
| 41     | 3/12  | Designing of<br>PDA's (Contd..)      | 1                      | Introduction<br>to PDA           | 4/1   | 1                        |
| 42     | 3/12  | Introduction to<br>bottom up parsing | 2                      | Definition of<br>PDA's           | 5/1   | 1                        |
| 43     | 5/12  | Introduction to<br>LR parsing        | 2                      | Language of<br>PDA               | 5/1   | 1                        |



| Period | Plan |                                     |                        | Execution                           |      |                          |
|--------|------|-------------------------------------|------------------------|-------------------------------------|------|--------------------------|
|        | Date | Topics to be covered                | Source Material needed | Topics Covered                      | Date | Source Material Referred |
| 44     | 5/2  | Design of SLR parser                | 2                      | Design of PDA                       | 6/1  | 1                        |
| 45     | 6/2  | Design of SLR parser (Contd.)       | 2                      | Design of PDA (Contd.)              | 6/1  | 1                        |
| 46     | 7/2  | Design of Canonical LR parser       | 2                      | Introduction to bottom-up parsing   | 6/1  | 2                        |
| 47     | 10/2 | Canonical LR parser (Contd.)        | 2                      | Introduction to LR parsing          | 8/1  | 2                        |
| 48     | 10/2 | LALR parser                         | 2                      | Design of SLR Parser                | 8/1  | 2                        |
| 49     | 12/2 | Introduction to Turing m/c          | 1                      | Design of SLR Parser (Contd.)       | 9/1  | 2                        |
| 50     | 12/2 | Problems that Computer Cannot Solve | 1                      | Design of Canonical LR parser       | 9/1  | 2                        |
| 51     | 13/2 | Extension of basic TM               | 1                      | Canonical LR parser (Contd.)        | 10/1 | 2                        |
| 52     | 14/2 | Design of TMs                       | 1                      | LALR parser                         | 11/1 | 2                        |
| 53     | 17/2 | Language that is not RE             | 1                      | LALR parser (Contd.)                | 12/1 | 2                        |
| 54     | 17/2 | Undecidable problem that is RE      | 1                      | Introduction to Turing m/c          | 12/1 | 1                        |
| 55     | 19/2 | Syntax directed Translation         | 2                      | Problems that Computer Cannot Solve | 12/1 | 1                        |
| 56     | 19/2 | Syntax directed definitions         | 2                      | Extension of basic TM               | 22/1 | 1                        |



| Period | Plan |                                            |                        | Execution                       |      |                          |
|--------|------|--------------------------------------------|------------------------|---------------------------------|------|--------------------------|
|        | Date | Topics to be covered                       | Source Material needed | Topics Covered                  | Date | Source Material Referred |
| 57     | 20/2 | Evaluation order for SDD's                 | 2                      | Design of TM's                  | 22/1 | 1                        |
| 58     | 21/2 | Intermediate Code generation               | 2                      | Language that is not RE         | 22/1 | 1                        |
| 59     | 24/2 | Variants - Syntax tree, Three address code | 2                      | Undecidable problems that is RE | 23/1 | 1                        |
| 60     | 24/2 | Design of Code generator                   | 2                      | Syntax directed Translation     | 23/1 | 2                        |
| 61     | 26/2 | Revision                                   | 1, 2                   | Syntax directed definition      | 25/1 | 2                        |
| 62     | 26/2 | Revision                                   | 1, 2                   | Evaluation Order for SDD's      | 27/1 | 2                        |
| 63     | 27/2 | Revision                                   | 1, 2                   | Intermediate Code generation    | 27/1 | 2                        |
| 64     | 28/2 | Revision                                   | 1, 2                   | Variants of Syntax tree         | 27/1 | 2                        |
| 65     | 2/3  | Revision                                   | 1, 2                   | Design of Code generator        | 29/1 | 2                        |
| 66     | 2/3  | Revision                                   | 1, 2                   | Revision                        | 30/1 | 1, 2                     |
| 67     | 4/3  | Revision                                   | 1, 2                   | Revision                        | 1/2  | 1, 2                     |
| 68     | 4/3  | Revision                                   | 1, 2                   | Revision                        | 3/2  | 1, 2                     |
| 69     | 5/3  | Revision                                   | 1, 2                   | Revision                        | 5/2  | 1, 2                     |



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|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------|
| Others                                  | Planned                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Actual                 | Remarks :   |
| Special Classes                         | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 13                     |             |
| Tutorials                               | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10                     |             |
| Assignments                             | 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 02                     |             |
| Seminars                                | 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 01                     |             |
| IA Tests                                | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3                      |             |
| Portions Covered in the entire Semester | 100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |             |
| Course Effectiveness                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |             |
| Students Feedback                       | Good                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                        |             |
| Students Responce                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |             |
| Result                                  | No. of Students AP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No. of Students Passed | % of Result |
|                                         | 68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 65                     | 95.59%      |
| Faculty in Charge                       | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><i>[Signature]</i></p> <p>Signature of Principal (&amp; Remarks if any)</p> <p><b>PRINCIPAL</b></p> <p>Alva's Institute of Engg. &amp; Technology,<br/>Mijar, MOODBIDRI - 574 225, D.K</p> </div> <div style="width: 45%;"> <p><i>[Signature]</i></p> <p>HOD's Signature</p> <p><b>H.O.D.</b></p> <p>Dept. Of Information Science &amp; Engineering<br/>Alva's Institute of Engg. &amp; Technology<br/>Mijar, MOODBIDRI - 574 225</p> </div> </div> |                        |             |