|  |  |  |  |
| --- | --- | --- | --- |
| **Name of The Course** | **Theory of Computation** | | |
| **Course Code** | **20CST-353** | | |
| **CO Attainment** | 1.7 |  |  |
| **List of Slow Learners** | **Action Taken** | **List of Fast Learners** | **Action Taken** |
| **Total**  **(496)**    **Annexure-1** | 1.Remedial classes conducted for students who fall into the slow learner category.  2. Students will be encouraged for active learning by specifically engaging slow learners in every class while asking questions and assigning them questions to build their logical thinking.  3.Recommendation of MOOC course through Coursera/ LinkedIn   * 1. Coursera link for DFA   <https://www.coursera.org/videos/cs-algorithms-theory-machines/Jydy3?query=theory%20of%20computation&source=search>   * 1. Coursera link for limitations   <https://www.coursera.org/learn/cs-algorithms-theory-machines/lecture/DCQnN/limitations>   * 1. Nptel video link for examples of DFA   <https://www.youtube.com/watch?v=NNSK4570Kho&list=PL3wYxbt4yCgBHUpwXDTLos3JStccGIax&index=4> | **Total (932)**    **Annexure-1** | 1. Advanced topics will be discussed in classes.   2.Computer Science : Algorithms, theory and Machines  <https://www.coursera.org/learn/cs-algorithms-theory-machines>   1. Coursera link for Regular Expressions   [https://www.coursera.org/videos/cs-algorithms-theory machines/9SUCI?query=theory%20of%20computation&source=search](https://www.coursera.org/videos/cs-algorithms-theory%20machines/9SUCI?query=theory%20of%20computation&source=search)   1. Encourage participation in symposiums and workshops. |

**For Slow Learners:**

Time Table:

|  |  |  |  |
| --- | --- | --- | --- |
| S. No. | Date | Time |  |
|  | 21/04/2023 | 15:30 - 16:00 and 12:00 PM-1:00 PM | Er.Renuka Rattan  E13572 |
|  | 21/04/2023 | 12:00 PM-1:00 PM and 15:30 - 16:00 | Er.Parvez E14563 |

Topics Covered in remedial classes:

1. Deterministic finite automata.
2. Regular Expression.

**Action Plan:**

For Slow Learners:

1. Attend Remedial classes: The first step would be to provide remedial classes to slow learners based on the timetable. These classes can help the students to understand the concepts at a slower pace and in a more focused way.

2. Suggested videos and courses: Provide suggested videos and courses that cover the basics of discrete mathematics and Graph theory. For example, videos such as “Introduction to Theory of Computation” can help the learners to understand the fundamental concepts of Theory of Computation.

**Practice Questions for Slow Learners:**

Ques1: Design a DFA with:-

1. ∑ = {0, 1} accepts those string which starts with 1 and ends with 0.
2. ∑ = {0, 1} accepts the only input 101.
3. ∑ = {0, 1} accepts even number of 0's and even number of 1's.

Ques2: Design an NFA with :-

1. ∑ = {0, 1} accepts all string ending with 01.
2. ∑ = {0, 1} accepts all string starting with 10.

Ques3:- Write language for L having set of string of length 2.

Ques4:- Write the regular expression for the language accepting all the string containing any number of a's and b's.

Links:

* 1. Equivalence of NFA and DFA

<https://www.youtube.com/watch?v=nyH7zyx7J5I&list=PL3wYxbt4yCgBHUpwXDTLos3JStccGIax&index=8>

**For Fast Learners:**

1. Advanced learners can be suggested to enroll in an online course such as “Theory of Computation” on Coursera. This course can help learners to explore advanced concepts of Theory of Computation.
2. By providing differentiated learning opportunities for both slow and fast learners, students can learn at their own pace and be motivated to excel in the subject of Theory of Computation.
3. Case study of Finite Automata:

Construction of vending machine.

Coffee vending machine which release coffee if yes input given 15 rupees.

1. A Case Study on Grammatical-Based Representation for Regular Expression Evolution.
2. Case Study – Verbose Regular Expression
3. Case Study : Street Addresses
4. Matching at the end of string