MERI College of Engineering & Technology (MERI-CET)

Session: 2020-2021
Department: CSE
Subject code: PCC-CSE-305G

Course- CSE
Semester: 5th
Faculty Name : Ms. PREETI

LESSON PLAN

Name of the Faculty	:	Ms. PREETI
Discipline	:	CSE
Semester	:	5th
Subject	:	Formal Languages & Automata(PCC-CSE-305G)
Lesson Plan Duration	:	14 Weeks (from Aug., 2020 to Nov., 2020)

** Work Load (Lecture/Practical) per week (in hours): Lectures-03.

Week	Theory	
	Lecture Day	**Topic (including assignment/test)**
1st	1st	**Finite Automata:**
	2nd	Introduction: Set, Power Set,
	3rd	Super Set, Alphabet, languages and grammars,
2nd	4th	productions and derivation.
	5th	Deterministic finite automata (DFA),.
	6th	Non-Deterministic finite automata (NDFA), Equivalence of DFA and NDFA
3rd	7th	Conversion of NFA to DFA ,
	8th	minimization of finite automata,
	9th	Finite automata with ϵ- moves
4th	10th	Acceptability of a string by a finite Automata.
	11th	**Introduction to Machines:**
	12th	Properties and limitations of Finite Automata
5th	13th	Properties and limitations of Finite Automata.
	14th	Assignment-1, Mealy and Moore Machines,
	15th	Equivalence of Mealy and Moore machines.

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6th	16th	Regular Expression
	17st	State and prove Arden's Method,
	18st	Regular Expressions,
7th	19th	Recursive definition of regular expression,
	20th	Regular expression conversion to Finite Automata and vice versa.
	21th	Properties of regular languages: Regular language,
8th	22th	pumping lemma for regular sets/languages,
	23rd	Application of regular languages. Assignment-2
	24th	Grammars: Chomsky hierarchy of languages, Relation between different types of grammars,
9th	25th	Context-free grammar, Derivation tree / Parse tree, Ambiguity in regular grammar and their removal,
	26th	Reduced Forms: Removal of useless symbols, null and unit productions,
	27th	Normal Form: Chomsky Normal form(CNF) and Greibach Normal Form(GNF),
10th	28th	Assignment-3rd, Deterministic and Non-Deterministic PDA, Design of PDA: Transition table,
	29th	Transition diagram and acceptability of strings by designed PDA, Pushdown automata (PDA) and equivalence with CFG.
	30th	Turing machines: The basic model for Turing machines (TM), Deterministic and Non- Deterministic Turing machines and their equivalence
11th	31th	Design of Turing Machines: Transition table,
	32nd	Transition diagram and acceptability of strings by designed turing machine.
	33rd	pure virtual functions, Variants of Turing machines, Halting problem of Turing machine,
12th	34th	PCP Problem of Turing Machine, Linear Bounded Automata,TMs as enumerators.
	35th	Assignment -4th, Undecidability: Church-Turing thesis
	36th	universal Turing machine,
13th	37th	the universal and diagonalization languages,

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	39th	reduction between languages and Rice s theorem,
	40st	throwing mechanism, undecidable problems about languages.
14th	41st	Revision of syllabus
	42rd	Revision of syllabus