

## Lesson Plan

**Name of Faculty :** Dr Vidhu Kiran Sharma, Assistant  
**Professor of CSE Discipline :** Computer Science and Engineering  
**Semester :** 6<sup>th</sup> (even)  
**Subject :** Formal Language & Theory of Automata  
**Lesson Plan Duration :** 15 weeks (Feb to July-2024)

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

Week	Theory		Topic Covered Date and Remarks		
	Lecture Day	Topic (Including Assignment/Test)	Date	HOD	Director-Principal
1 <sup>st</sup>	1	Finite State system			
	2	NDFA			
	3	DFA			
	4	Equivalence of DFA and NDFA			
2 <sup>nd</sup>	5	Finite automata with E moves			
	6	Regular expression			
	7	Regular expression conversion			
3 <sup>rd</sup>	8	Arden method conversion			
	9	Concept of basic machine			
	10	Properties and limitation of FSM			
	11	Moore machine with examples			
4 <sup>th</sup>	12	Mealy machine with examples			
	13	Equivalence of Moore and Mealy machine			
	14	Properties of regular sets			
	15	Pumping lemma for regular sets			
5 <sup>th</sup>	16	Application of pumping lemma			
	17	Closure properties of regular set			
	18	My hill nerode theorem			
	19	Minimization of finite automata			
6 <sup>th</sup>	20	Minimization algorithm			
	21	Context free grammar			
	22	Context sensitive grammar			
	23	Reduced forms			
7 <sup>th</sup>		<b>1<sup>st</sup> Minor Test</b>			
8 <sup>th</sup>	24	Assignment 1 <sup>st</sup>			
	25	Removal of useless symbols			
	26	Unit productions			
	27	Ambiguity regular grammar			
9 <sup>th</sup>	28	Chomsky normal form			
	29	Griebach normal form			
	30	Introduction to pushdown machine			
	31	Application of pushdown machine			
10 <sup>th</sup>	32	Problems and solutions			
	33	Turning machine			
	34	Non deterministic turning machine			
	35	Deterministic turning machine			
11 <sup>th</sup>	36	Design of turning machine			
	37	Halting problem of turning machine			
	38	PCP problems			
	39	Assignment 2			
12 <sup>th</sup>	40	Problem and solutions			
	41	Chomsky hierarchies			
	42	Chomsky hierarchies of grammar			
	43	Unrestricted grammar			
13 <sup>th</sup>	44	Context sensitive language			
	45	Relations between languages of class			
	46	Problem and solutions			
	47	Examples of grammars			
14 <sup>th</sup>		<b>2<sup>nd</sup> Minor Test</b>			
15 <sup>th</sup>	48	Examples of hierarchies			
	49	Computability			
	50	Basic concept of Computability			
	51	Primitive recursive functions			
	52	Problem and solutions			