



Department of Electronics and Communication Engineering


Academic Year: 2024 – 2025(ODD Semester)

INNOVATIVE TEACHING METHODS

Degree, Semester & Branch : III Semester B.E. ECE A

Course Code & Title : EC3352 & DIGITAL SYSTEM DESIGN

Name of the Faculty member: Mrs.V.Krishna Meera

Sl.No.	Date	Topic(s)	Activity*	Reference
UNIT I BASIC CONCEPTS				
1.	21.08.2023	Implementation of Boolean expressions using universal gates	One Minute Paper	https://oncourseworkshop.com/self-awareness/one-minute-paper/
<p style="text-align: right;">H. kavitha</p> <p>One minute paper.</p> <p>Implement the expression using NAND gate By using $\bar{A}B + A\bar{B}$</p> <p>Step 1 :- Draw AOI logic.</p> <p>Step 2 :- Draw Bubbles on OIP AND gate. and I/P OF OR gate.</p> <p>Step 3 :- Replace By nand gate.</p>				

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UNIT II COMBINATIONAL LOGIC CIRCUITS

1.	10.09.2023	Parity Generator/Checker, Seven Segment display decoder	Note Check	https://www.niu.edu/citl/resources/guides/active-learning-activities.shtml#:~:text=Note%20Check,clarification%20on%20a%20course%20concept.
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Truth table:

X	Y	Z	Odd parity Bit	Even parity Bit
0	0	0	1	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	0	1

K-map:

Odd parity

	yz=00	01	11	10
x=0	1		1	
x=1		1		1

$$\text{odd} = \bar{x}\bar{y}z + \bar{x}yz + x\bar{y}z + xy\bar{z}$$

$$= \bar{x}(\bar{y}z + yz) + x(\bar{y}z + y\bar{z})$$

$$= \bar{x}(y \oplus z) + x(y \oplus z)$$

$$= x \oplus y \oplus z$$

Even parity

	yz=00	01	11	10
x=0		1		1
x=1	1		1	

$$\text{even} = \bar{x}\bar{y}z + \bar{x}y\bar{z} + x\bar{y}\bar{z} + xy\bar{z}$$

$$= \bar{x}(\bar{y}z + y\bar{z}) + x(\bar{y}\bar{z} + yz)$$

$$= \bar{x}(y \oplus z) + x(\overline{y \oplus z})$$

$$= x \oplus y \oplus z$$

Even parity checker:

P	A	B	C	Parity Error PEC
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	0
0	1	1	0	0
0	1	0	1	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	1
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

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