

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**  
**SUBJECT CODE: 19CS2109**  
**COMPUTER NETWORKS AND SECURITY**

**ERROR DETECTION#2**

**Date of the Session:** \_\_\_\_/\_\_\_\_/\_\_\_\_

**Time of the Session:** \_\_\_\_\_to\_\_\_\_\_

**Learning outcomes:**

- General idea of what Error Control is. [stanford.edu]
- Understand the Error Detection methods like CRC and parity.

**IN-TUTORIAL:**

1. The message 110010011 is to be transmitted using the generator polynomial  $x^3+1$  to protect it from errors. Find the final data to be transmitted after performing CRC. Also check for errors on the received data using CRC.

**Solution:**



2. A bitstream 10011101 is transmitted using the standard CRC method. The generator polynomial is  $x^3+1$
- What is actual bit string transmitted?
  - Suppose the third bit from the left is inverted during transmission. How will receiver detect the error?

**Solution:**



**POST-TUTORIAL:**

1. Consider the message  $M=101001011$  and do the Cyclic Redundancy check for the above message using the following divisor polynomial  $x^5 + x^3 + x^2 + 1$ .

**Solution:**

2. For the given message 11011101, find the even and odd parity and then write a python code.

**Solution:**

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*(For Evaluator's use only)*

<u>Comment of the Evaluator (if Any)</u>	<u>Evaluator's Observation</u> Marks Secured: _____ out of _____  Full Name of the Evaluator:  Signature of the Evaluator      Date of Evaluation:
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