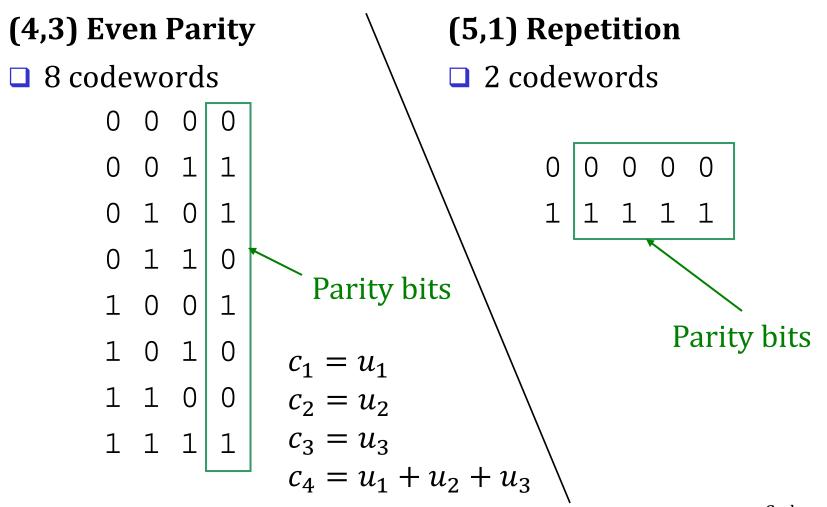
Example: Systematic Codes



Example: A Non-systematic Code

$$u = (u_1, u_2, u_3)$$
 Encoder $c = (c_1, c_2, c_3, c_4)$

Encoding:

$$c_1 = u_1$$

$$c_2 = u_1 + u_2 + u_3$$

$$c_3 = u_2 + u_3$$

$$c_4 = u_1 + u_2$$

☐ It is non-systematic because u_2 and u_3 are not equal to any check bits.

Message u	Codeword c
000	0000
001	0110
010	0111
011	0001
100	1101
101	1011
110	1010
111	1100