UNIVERSITY OF CALIFORNIA, DAVIS
Error Correcting Codes I

PROBLEM SET 4

Reading Assignment: Lecture Notes: 5. Textbook: Chapter 6.

Solve problems by hand, i.e., do not use symbolic and/or numerical mathematics software package to solve the problems. However, you can use them, if you want, to check your answers.

Problem 6.1 In part **a.**, you can use Table 2.9. In part **b.**, the matrix need not be in systematic form.

Problem 6.2 However, instead of determining the generator polynomials of all primitive BCH codes of length 31, make a table that lists for each $t = 1, 2, \ldots, 15$, the degree of the generator polynomial (and not the polynomial itself) of the primitive BCH code with designed error-correcting capability equal to t.

Problem 6.3 You can use the table constructed in Problem 2.14 in PROBLEM SET 2. You have to go through the decoding steps of the Berlekamp-Massey decoding algorithm in each case.

Problem 6.4