

Errata for Textbook by Dorf and Bishop

Page numbers correspond to 10th edition. This list was generated by me, S. Koskie, for ECE382 / ME482 at IUPUI. It was generated from my notes and from a list provided by the textbook publisher, Prentice-Hall. Please email any corrections to this list to me, not the textbook authors nor the textbook publisher.

Front Matter

p. xiii Appendix G title “Number” should be “Numbers”.

Chapters 1–3

p. 81 Figure 23.5 (a) Vehicle velocity should be “ ω ” not “ ω_d ”.
 p. 126 DP2.4, line 4 “(b)” should precede “Find”.
 p. 129 line 2 “ $s = s + jw$ ” should be “ $s = \sigma + j\omega$ ”.
 line 3 “ jw ” should be “ $j\omega$ ”.

Chapters 4–6

p. 211 (4.60) The factor “ $(1/s)$ ” should be in the numerator not the denominator.
 p. 216 line 3 of script “ $f=0.5;$ ” should be “ $b=0.5;$ ”.
 p. 236 AP4.4, third line “ R ” should be “ R_a ”.
 p. 254 second equation, denominator “ S ” should be “ s ”.
 p. 265 line 2 “notunity” should be “nonunity”.
 p. 277 line after (5.55) “identical” should be “analogous”.
 p. 278 line after (5.63) “It follows from ... (5.56) ... that ...” should be “Satisfying (5.56) ... requires ...”.
 p. 308 MP5.3 “Section 5.3” should be “Section 5.6”.
 p. 316 sentence containing (6.3) Sentence should state that a_0 is assumed nonzero.
 p. 318 Example 6.2 In the Routh array “ b_1 ” and “ c_1 ” should be “ b_2 ” and “ c_2 ”. This change must also be made immediately after “where”, with attention to the fact that in the expression for c_2 , the both of the “ b_1 ”s should be “ b_2 ”s.
 p. 321 1st Routh array Auxiliary polynomial method should have been used in third row.

Chapters 7–9

- p. 362 (7.29) “ $-p_j$ ” should be “ p_j ” and “ $-z_i$ ” should be “ z_i ”.
- p. 371 Table 7.2, Step 3 same as in (7.29).
 Table 7.2, Step 5 Add “and breakin” after “breakaway” and “(s)” after “point”.
- p. 402 matlab script “num = k”[1 4 3];” should be “num = K*[1 4 3];”
- p. 402 eighth line from bottom “determined” should be “determine”
- p. 405 Figure 7.46 “ K_3 ” should be “ K_D ”.
- p. 429 Figure DP7.13 Both feedback paths into the summer should be negative.
- p. 430 MP7.1, line 1 “riocus” should be “rlocus”.
 MP7.1, line 3 “ K ” should be “ k ”.
 Figure MP7.1 caption “ K ” should be “ k ”.
- p. 442 second line of (8.28) Argument of \tan^{-1} should be $\frac{2\zeta_k\omega_{n_k}\omega}{\omega_{n_k}^2 - \omega^2}$.
- p. 474 Table 8.5 First entry phase should start at zero not -45 degrees.
- p. 574 AP9.9 “Figure AP7.13 which uses a PI controller. Let $K_I/K_P = 0.2$,” should be replaced by “Figure AP9.5. Let the controller be $G_c(s) = K_D(s + 0.2)$. Also, next line, “ K_P ” should be replaced by “ K_D ”.

Chapters 10–12

- p. 587 line above (10.10) “a” should be “ α ”.
- p. 587 line below (10.10) “a” should be “ α ”.
- p. 590 Step 5
last line “a” should be “ α ”.
- Rounding to two decimal places yields
 $\omega_B = 1.33(2.22) = 2.95$ not 3.00.
- p. 590 Example 10.1 “ K_1 ” on page 590 inexplicably turns into “ K ” on page 591.
- p. 625 third line above (10.95) “ $s = -20$ ” should be “ $s = -8$ ”.
- line above (10.95) “ $p = 60$ ” should be “ $p = 13$ ” and “ $\alpha = 3$ ” should be “ $\alpha = 1.625$ ”.
- (10.95) Should be $G(s)G_c(s) = \frac{110,175(s+8)}{s(s+10)(s+13)(s+1000)}$
- line after (10.95) “2%” should be “1.5%”.
- second line after (10.95) “0.35 second” should be “0.33 second”.
- p. 626 Table 10.4, line 2 “2” should be “1.5” and “350” should be “330”.
- p. 633 2 lines above (10.100) Replace “Since ... will use $\omega_n = 120$. Then” by “If we use $\omega_n = 120$, then”.
- p. 633 Table 10.6, line 2 “150” should be “250”.
- p. 644 P10.23 parentheses are needed around “10a” and “10b”.
- p. 644 P10.23 b corresponds to the lag filter and a to the lead filter.
- p. 661 paragraph containing (11.2) The controllability matrix is as given in (11.2) whether or not the system is SISO. It is when the system has a single input (so B is $n \times 1$) that P_c is square so we can take the determinant of P_c to determine whether the matrix has full rank.
- p. 707 Table 11.1, line 2 “50” should be “250”.
- p. 728 Table 12.1 Table is wrong. Correction is shown below¹.
- p. 728 line 1 of text Insert “to a unit step” between “error” and “is”.
- (12.12) Should read “ $e_{ss} = \lim_{s \rightarrow 0} s[1 - T(s)]\frac{1}{s} = \frac{1}{1 - K}$.”
- line after (12.12) Delete “and $e_{ss} = 0$ when $K = 1/2$.”.
- p. 735 (12.23) s is an independent variable. “ ds/dK ” should be “ $1/(dK/ds)$ ”.
- p. 735 line above (12.26) Insert after “ $j\omega$ ” “, where $\omega = 0.5\sqrt{4K - 1}$ and $K > 0.25$ ”.
- p. 735 line after (12.26) “0.2” should be “0.25”.
- p. 735 Figure 12.13 Over the range $0.25 < K < 5$ the sensitivity decreases from ∞ towards 0.5.
- p. 760 expression for K_1 “1187” should be “1887”.
- p. 761 (12.71) “1187” should be “1887”.
- p. 762 matlab script, line 3 “1187” should be “1887”.
- p. 764 Table 12.11, line 2 “50” should be “250”.
- p. 784 MP12.2 The numerator of $G(s)$ should be “1” not “p”.

¹The table should be as follows:

Chapter 13

- p. 813 (13.60), 2nd line “ $+K_3Tx(k-1)$ ” should be “ $-[K_3/T]x(k-1)$ ”.
- p. 828 Definition of PID controller “times” should be “terms”.

End Matter

- p. 866 Reference 17 should be: F. M. Ham, S. Greeley, and B. Henniges,
 “Active Vibration Suppression for the Mast Flight System,”
IEEE Control Systems Magazine, Jan. 1989, pp. 85–90.

Table 12.1 Results for Example 12.2

K	0.25	0.45	0.50	0.55	0.75
$ e_{ss} $	1.33	1.82	2.00	2.22	4.00
Undershoot	-0.05	-0.09	-0.10	-0.10	-0.14
Settling time (seconds)	10.7	16.6	18.8	21.4	42.4