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 + jω” should be “s = σ + jω”.

line 3 “jω” should be “jω”.

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_d”.

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\kappa_\omega \omega_n}{\omega_n^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 Rounding to two decimal places yields
ω_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) “p = 60” should be “p = 13” and “α = 3” should be “α = 1.625”.
line above (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 ω_n = 120. Then” by
“If we use ω_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 × 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 \to 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)”.
line above (12.26) Insert after “jω” “, where ω = 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 “$+K_3 T x(k - 1)$” should be “$-[K_3/T] x(k - 1)$”.

p. 828 Definition of PID controller “times” should be “terms”.

End Matter


Table 12.1 Results for Example 12.2

<table>
<thead>
<tr>
<th>K</th>
<th>0.25</th>
<th>0.45</th>
<th>0.50</th>
<th>0.55</th>
<th>0.75</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>e_{ss}</td>
<td>$</td>
<td>1.33</td>
<td>1.82</td>
<td>2.00</td>
</tr>
<tr>
<td>Undershoot</td>
<td>−0.05</td>
<td>−0.09</td>
<td>−0.10</td>
<td>−0.10</td>
<td>−0.14</td>
</tr>
<tr>
<td>Settling time (seconds)</td>
<td>10.7</td>
<td>16.6</td>
<td>18.8</td>
<td>21.4</td>
<td>42.4</td>
</tr>
</tbody>
</table>