Chapter 1 Mathematical Modeling

P 15 In Part c), change 0.9872 to 0.9875
P 16 In TABLE 1.1, change "N" to "n"
P 17 In Eq 1.36, change "y(n+1)" to "y(n-1)"

Chapter 2 Continuous-time Systems

P 39 In Eqs 2.21 and 2.22, move \( \omega_n \) outside the square root sign
P 44 In Figure 2.7, change "\( Q_{ln}, c_1(t) \)" to "\( Q_{ln}, c(t) \)"

Chapter 3 Elementary Numerical Integration

P 93 Two lines after Eq 3.14, change the word "unit" to "unity"
P 98 On the 2nd line below Figure 3.6,

change "A general formula for \( x_A(n+1) \)" to "A general formula for \( x_A(n), n = 1,2,3,... \)"

In Eq 3.30, change \( x_A(0) \) to \( x(0) \)
Change Eq 3.31 to \( x_A(n) = x(0) + T[u(0)+u(1)+...+u(n-1)], \ n=1,2,3,... \)

In Eq 3.32, change upper limit of sum to \( n-1 \)
In TABLE 3.1, headings "Forward Euler", "Backward Euler", and "Continuous-time" should be shifted one column to the right. In TABLE 3.1, change "N" to "n".

On the line above Eq 3.49, change "quadratic function" to "quadratic equation".

On the first line of Part b), change "n=0,1,2,3,..." to "n=0,10,20,...,150".

On the first line of the 3rd paragraph, change "n=1-6000" to "n=1 to 6000".

In Eq 3.92, change \(x_A(n+1)\) to \(x_A(n + 1)\).

In Figure 3.18, change "\(L_1 = f[x_A(n,\{n\}]\)" to "\(L_1 = f[x_A(n), u(n)]\)".

In line above Eq 3.132, change "line segment with slope \(L_1\)" to "line segment \(L_1\)".

In Part c), change subscript "t=1" to "t=T".

In TABLE 3.6, change "N" to "n".

In Eq 3.214, change "\((W - \gamma V) \vec{T}_c\)" to "\((W - \gamma V) - \vec{T}_c\)"

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**Chapter 4 Linear Systems Analysis**

Eq 4.250 should read \(\phi_{A1}(s) = \frac{1}{\zeta(s)}[0.15(s^2 + 0.335s + 0.0208)]\).

In Eq 4.319, the denominator should be \(\{1+[(2)(0.5)]^2\}^{1/2}\).

In Eq 4.332, change "currency" to "\(\infty\)".

In TABLE 4.4, change "\(F(s)= L\{f(t)\}\)" to "\(F(s)=\{ f(t)\}\)".

In TABLE 4.4, last column, 2nd from bottom row, change "\(e^{-2at}\)" to "\(e^{-2T}\)".

In Figure 4.43, change \(n=0,2,4,...\) to \(k=0,2,4,...\).

In last paragraph, change "From TABLE 4.4" to "From Equations 4.357 and 4.358".

In Eq 4.416, change "\(\delta k\)" to "\(\delta_k\)".

In last paragraph, change "Converting \(A_1\) polar form" to "Converting \(A_1\) to polar form".

In first line after Figure 4.44, change "Section 4.4.6" to "Section 4.6.3".

In Eq 490, change to \(y_k - 2(1 - \zeta\omega_n T)y_{k-1} + \left[1 - 2\zeta\omega_n T + (\omega_n T)^2\right]y_{k-2} = K(\omega_n T)^2 u_{k-2}\).

In Eq 4.504, insert a "\]" before "\(y_{k-2}\)".

In Eq 4.52, the equations should be:

\[
\begin{align*}
x_{1,k+1} &= x_{2,k} \\
x_{2,k+1} &= x_{3,k} \\
x_{3,k+1} &= -a_1x_{1,k} - a_2x_{2,k} - a_3x_{3,k} + u_k
\end{align*}
\]
P 253  On the 2\textsuperscript{nd} line from the top, change "\( \Phi_0 \)" to "\( \Phi_0 = I \)"
On the 4\textsuperscript{th} line from the top, change "\( \Phi(z) \)" to "\( \Phi_0 = I \)"

P 259  In Eq 4.588, delete 2\textsuperscript{nd} occurrence of "terms generated from \( \frac{1}{3} \{U(z)\} \)"

P 265  In Eq 4.630, the term in front of bracket should be \( (\sqrt{2})^k \)

P 267  In first paragraph, change "Section 4.4.7" to "Example 4.27 in Section 4.7.2"
In 3\textsuperscript{rd} paragraph, change "Section 4.4.7" to "Section 4.7.2"
In Eq 4.640, change "\( -12\zeta\omega_nT \)" to "\( -1 + 2\zeta\omega_nT \)"

P 283  In Figure 4.81, change both occurrences of "\( u(t) \)" to "\( y(t) \)" and "\( u_k \)" to "\( y_k \)"

P 284  in Eq 4.691, delete the vertical bar at the end

P 285  In Example 4.35, Part (b), change "Find \( |H(e^{j\Omega T})| \)" to "Find \( |H(e^{j\omega T})| \) and plot"

P 286  At the end of Part (d), change "\( |H(e^{j\omega T})| \)" to "\( |H(e^{j\omega T})| \)"

**Chapter 5 Simulink**

P 352  In the 2\textsuperscript{nd} paragraph, change "Figure 5.16" to "Figure 5.18"
In the paragraph after Eq 5.9, change "\( \theta_{com}(t) \)" to "\( \nu_{com}(t) \)"

P 358  Matrix \( A \) is incorrect. The correct matrix is

\[
A = \begin{bmatrix}
0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\
-(K_p + K_r) \frac{M}{M_t} & -(B_f + B_r) \frac{M}{M_t} & K_i \frac{M}{M_t} & B_f \frac{M}{M_t} & K_i \frac{M}{M_t} & B_r \frac{M}{M_t} & K_i \frac{M}{M_t} & B_f \frac{M}{M_t} \\
0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 \\
K_p \frac{M}{M_t} & B_f \frac{M}{M_t} & -(K_p + K_r) \frac{M}{M_t} & -(B_f + B_r) \frac{M}{M_t} & 0 & 0 & K_i \frac{M}{M_t} & B_f \frac{M}{M_t} \\
0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\
K_r \frac{M}{M_t} & B_r \frac{M}{M_t} & 0 & 0 & -(K_p + K_r) \frac{M}{M_t} & -(B_f + B_r) \frac{M}{M_t} & -K_i \frac{M}{M_t} & -B_r \frac{M}{M_t} \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\
K_p L_c - K_r L_f & B_f L_c - B_r L_f & K_p L_f & B_f L_f & K_p L_f & B_f L_f & -K_i L_f & -B_r L_f \\
\end{bmatrix}
\]
TABLES 5.1 and 5.2 headings are wrong. The corrected tables are

<table>
<thead>
<tr>
<th>$e_{i}$</th>
<th>$\hat{x}_{i}$</th>
<th>$\leq SL + \Delta$</th>
<th>$&gt; SL + \Delta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$&gt; 0$</td>
<td>$K_{i,d}$</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>$\leq 0$</td>
<td>$K_{i,d}$</td>
<td>$K_{i,d}$</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 5.1** Function $K_i(e_i, \hat{x}_i)$

<table>
<thead>
<tr>
<th>$e_{g}$</th>
<th>$\hat{x}_{g}$</th>
<th>$\leq SL + \Delta$</th>
<th>$&gt; SL + \Delta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$&gt; 0$</td>
<td>$K_{g,d}$</td>
<td>$K_{g,d}$</td>
<td></td>
</tr>
<tr>
<td>$\leq 0$</td>
<td>$K_{g,d}$</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 5.2** Function $K_g(e_g, \hat{x}_g)$

P 372 In the first paragraph, change "Figure 2.38" to "Figure 2.43"

P 381 In Eq 5.86, change "$\hat{x}_1(n+1)$" to "$\hat{x}_1(n+1)$"

P 401 In Figure 5.115, right above "Arrowdata2.mat", change "Pr(Hit)=0.2087" to "Pr(Hit)=0.2082"

P 431 In Figure 5.118, change "$u(0)$" to "$\theta(0)$" in each of the four graphs