# List of Corrections for the Book *Linear Dynamic Systems and Signals*

August 15, 2003 (UPDATED JANUARY 2004, **Updated December 2004**)

**TEXT** (CAPITAL LETTERS INDICATE JAN. 2004 UPDATES. **Bold letters indicate Dec. 2004 updates)**

PAGE 41, in the last formula, replace $-2u(t)$ by $-2u(t-1)$

page 84, $1/T$ is missing in the front of the integral in formula (3.15)

page 103, formula (3.60), $1/\pi$ is missing in the argument of the sinc function. It should be $\mathrm{sinc}^2(\omega\tau/4\pi)$, also in Table 3.4

PAGE 146, Example 4.3, replace $e(t)$ by $e^{-at}u(t)$

PAGE 158, formula (4.24), replace $\{F(s)\}$ by $\mathcal{L}^{-1}\{F(s)\}$

**page 163**, Example 4.14, in the second formula, replace first 4 numerator $a$'s by $b$'s. In the third formula replace $cb$ by $ca$

**page 226**, Example 5.15, the true values for the coefficients are $c_1 = -\frac{3}{2}+j\frac{1}{2}$ and $c_2 = 3$, implying $|c_1| = \frac{1}{2}\sqrt{10}$ and

$$f[k] = \left(\sqrt{10}\left(\tfrac{1}{2}\right)^k \cos\left(k\tfrac{\pi}{2} + 161.57°\right) + 3\left(\tfrac{1}{2}\right)\right)^k u[k]$$

page 250, omit the first $z$ in the first formula under formula (5.76)

PAGE 266, Table 5.2, line seven, replace $z+1$ by $z+a$

PAGE 323, Example 7.5, first formula, replace $f(t) = e^{-5t}u(t)$ by $f(t) = 4e^{-5t}u(t)$

page 341, formula for $h[k]$, replace $+h_0[k]$ by $+h_0[k+2]$

page 417, in formula (8.102) replace $i = 1$ by $i = 0$.

PAGE 466, formula (9.11), replace $e^{-j}$ by $e^{+j}$

page 484, in the first formula $u$ in $u[k]$ is missing, and in the second formula replace the second $0.5$ by $1$

page 494, formula (9.100), replace $xy$ by $yx$ on the right-hand side, also on page 500

PAGE 521, in formula (10.47), replace $p_{\omega_0}$ by $p_{2\omega_0}$

**PROBLEMS**

PROBLEM 1.2, replace $dt^2$ by $dt$.

PROBLEM 1.4, replace $d^2y(t)/dt$ by $d^2y(t)/dt^2$.

Problem 3.16, replace $\delta(\omega \pm \omega_0)$ by $\delta(\omega \mp \omega_0)$

Problem 3.17, replace $2\pi j^n(d^n\delta(\omega)/d\omega^n)$ by $(j\omega)^n$. $2\pi j^n(d^n\delta(\omega)/d\omega^n)$ is the answer to the problem

Problem 3.23(c), $\frac{d}{dt}\left(e^{-5(t-3)}\right)u_h(t-3)$ is the answer to Part (c)

**Problem 3.26**, a minus sign is missing in the front of $\frac{j}{2}$

PROBLEM 3.59, delete the part after "Using MATLAB, plot the steady state response."

Problem 4.44, add in Part (a), $y^{(3)}(0^-) = 0$

Problem 5.31, replace $4y[k]$ by $4y[k+1]$

Problem 6.3, the signal $f_2(t)$ is equal to 1 from $t = 2$ to $t = 4$ and equal to zero otherwise

Problem 7.5, add at the end "for $f(t) = e^{-t}u(t)$"

Problem 7.19, part (b), add 0.5 in front of $y_2[k]$

Problem 7.20, add at the end "for $f[k] = (-1)^k u[k]$"

PROBLEM 8.21, Part (c) finish by $f[k] = ku[k]$. and delete ", "assuming that $x_1[0] = 1$ and $x_2[0] = 3$."

Problem 8.38, replace $e^{-x_1}(t)$ by $e^{-x_1(t)}$

Problem 8.47, in the first formula replace $q[k+1-d]$ by $y[k+1-d]$

Problem 9.3, replace the subscript 5 by 6

Problem 11.14, delete the second sentence

Problem 11.15, delete the second sentence

Problem 11.21, add at the end: Use $E = 11\,\mathrm{V}$ and $\omega_0 = 3.14\,\mathrm{rad/s}$

Problem 12.11, replace $H$ by $M$

**ANSWERS**

ANSWER 3.2, $0.5$ factor is missing in the solution for $X_n$ and its magnitude. Also in $x(t)$ remove 2 in front of the sum.

Answer 3.25, $\mathcal{F}^{-1}$ is missing in the front of the answer to Part (a)

Answer 3.33, replace $s$ by $j\omega$ and the last $s$ in the numerator replace by $1$

Answer 4.3, replace $u(t-t_0)$ by $u(at-t_0)$

ANSWER 4.7(c), add $+2/\left((s+1)^2+4\right)$

ANSWER 4.8(c), delete $2-$ and change the sign for the second term.

ANSWER 4.20(a), add $+(e^{-t}-te^{-t})u(t)$ and in Answer 4.20(b), replace $-2/3$ by $-2/9$ and $-1/3$ by $-1/9$

**Answer 5.8c**, replace the first two terms by$z/(z-1)^2$

Answer 7.7, the answer given is for Part (c)

Answer 8.16(a), replace $2s$ by $4s$.

Answer 8.17(a), replace $-t$ by $-2t$ and $-2t$ by $-t$

Answer 8.17(c), the correct answer is $\mathbf{x}(t) = [-0.5 - e^{-t} + 0.5e^{-2t} \quad e^{-t} - e^{-2t}\,]^T$

ANSWER 8.21(a), multiply the answer by $u[k]$ and replace (2,2) element by $-(-1)^k + 2(-2)^k$. In Answer 8.21(c), the first three coefficients should be respectively changed to $-5/4,\ -14/9,\ 11/36$

Answer 8.24(b), the correct coefficients for $Y(z)$ are respectively given by $1, 2, -1, 0$.

Answer 9.3, replace 3 by 3.5

Answer 9.8, replace $e^{-j}$ by $e^{j}$

**MATLAB PROGRAMS**

page 307, replace `3t` by `3*t`

page 436, replace `i=0:` by `i=1:`

**MATLAB LABORATORY EXPERIMENTS**

page 128, Part 4, line 5, replace $x_N(t)$ by $y_N(t)$

page 262, formula in Part 2, replace $-3+$ by $-3z^4+$

page 372, Part 4, line 2, replace `eig` by `roots`

page 373, Part 1, line 2, replace `eig` by `roots`

page 373, Part 2, line 4, replace "step" by "impulse"

page 602, 9th line from the bottom, replace $1 + K_i/s$ by $K_p + K_i/s$