

Errata (June 2022)

1) The label on the vertical axis of the top graph in the (a) portion of Fig. 1.6 on page 11 should be $f(t) = \cos(\omega_1 t)$ rather than $f(t) = \cos(\omega_1 x)$.

2) The statement for Problem 4 on page 38 should say $f(t) = \cos(\omega_1 t)$ and $f(t) = \sin(\omega_1 t)$.

3) The last paragraph on page 52 should say “When the constant a equals zero, this exponential function is identical to the constant function $f(t) = c$ with $c = 1...$ ” (rather than $F(s) = c$).

4) The exponent in the definition of the Gamma function in the equation between Eqs. 2.18 and 2.19 on page 73 should be $n - 1$ rather than $n + 1$, so the correct definition is

$$\Gamma(n) \equiv \int_0^{+\infty} x^{n-1} e^{-x} dx$$

and the argument of the Gamma functions in Eqs. 2.19 through 2.22 should be $n + 1$ rather than $n - 1$. Those equations should be

$$\Gamma(n + 1) = \int_0^{+\infty} x^n e^{-x} dx \quad (2.19)$$

$$F(s) = \left(\frac{1}{s^{(n+1)}} \right) \int_0^{+\infty} x^n e^{-x} dx = \frac{1}{s^{(n+1)}} \Gamma(n + 1) \quad (2.20)$$

...using the relation between the Gamma function of $(n + 1)$ and n factorial (written as $n!$):

$$\Gamma(n + 1) = n! \quad (2.22)$$

$$F(s) = \frac{1}{s^{(n+1)}} \Gamma(n + 1) = \frac{n!}{s^{(n+1)}} \quad (2.22)$$

5) In the first full paragraph on page 96, the sentence beginning “Using $e^{sa} F(s)$ rather than $F(s)$ as the weighting factor...” should say “Using $e^{-sa} F(s)$ rather than $F(s)$ as the weighting factor...”.

6) In the second-last paragraph on page 110, the parenthetical phrase “(scaled by $(e^{sT})^{(n-1)}$)” should say “(scaled by $(e^{-sT})^{(n-1)}$)”

7) In the problem statement for Problem 10 of Chapter 3 on page 120, the exponential factor in the third term of $f(t)$ should be e^{-2t} rather than e^{-t} (so

that term should be $e^{-2t} \cosh(2t)$.

8) In the long paragraph on page 140, the phrase “...and capacitance has units of farads (written as ‘H’ ...)” should say “...and capacitance has units of farads (written as ‘F’ ...)”.

9) In Figure 4.9 on page 150 the driving angular frequency should be given as 2500 rad/sec rather than 3000 rad/sec.

10) On the left side of Equation 4.111 on page 157, the Laplace operator symbol should appear before the partial derivative:

$$\mathcal{L} \left[\frac{\partial \tau(x, t)}{\partial t} \right] = sT(x, s) - \tau(x, 0). \quad (4.111)$$

11) In the table on page 177, the basis functions should be e^{st} and z^n .

12) The cosine term in Equation 5.37 on page 191 should be $\cos(\omega_1 n)$ rather than $\cos(\omega_1)$.

13) The last full line on page 196 should say $z = e^s$ rather than $z = e^{-s}$.