Errata

Chapter 2

- Exercise 2.7 should read

EXERCISE 2.7
Modify the code displayed on Page 54 to keep track of ...

Chapter 3

- In the code fragment on Page 129, the commenst should read

```
% INPUT:  N the actual size of the arrays for this problem
%         A an N by N array of coefficients
%         b a vector of length N
```

- In Figure 3.4 on page 133, $R4$ should be R_4.

- In Exercise 3.20 on page 136, the paragraph should not be indented.

- On Page 140, there's an error in the lower limit of integration. The equation should read

$$\int_{-1}^{1} p_i(x)p_j(x)\,dx = 0, \qquad i \neq j, \tag{3.142}$$

Chapter 5

- The second equality in Equation 5.64 is incorrect. It should read

$$\omega_j = 2\sqrt{k/m}\sin\left(\frac{K_j a}{2}\right) = 2\sqrt{k/m}\sin\left(\frac{j\pi}{2(N-1)}\right). \tag{5.64}$$

- On Page 238, the six ε should be changed to ϵ.

- Page 279:

$$p(x) = \sum_{j=0}^{N} \alpha_j \phi_j(x), \tag{5.185}$$

- Table 5.2 contains several minor numerical errors. They are not particularly important (a few units in the last digit), except when the results of Exercise 5.33 are compared to them. The Table should read

TABLE 5.2: Discretization Error

	$y(0.2)$	$y(0.4)$	$y(0.6)$	$y(0.8)$
Finite Difference				
$h = 0.20$	4.3017	13.9254	31.9762	61.0277
$h = 0.10$	5.0038	15.5637	34.3745	63.2006
$h = 0.05$	5.1587	15.9133	34.8678	63.6294
Richardson Extrapolation				
0.20/0.10	5.2378	16.0198	35.1739	63.9249
0.10/0.05	5.2103	16.0298	35.0323	63.7723
0.20/0.10/.05	5.2085	16.0243	35.0229	63.7621
Analytic Result	5.2088	16.0253	35.0247	63.7644

- In `Fragment5_23.m` on the Supplemental CD, the comment should read

```
%       0.05291772 nm/Bohr    and     27.21138 eV/Hartree
```

Chapter 6

- Exercise 6.1 is ended at the wrong place. It should read

EXERCISE 6.1
Examine the overshoot as the number of terms in the series increases. Evaluate the approximation, and hence the overshoot, in the vicinity of the discontinuity, $0 \leq t \leq 0.1$, retaining 10, 20, 30, 40 and 50 terms in the series. The persistence of the overshoot is known as the Gibbs phenomena.

As another example, ...

- Page 327. The paragraph before the section on Ranging should conclude:

  what you first learned.

- In Exercise 6.27, simple frequency should be used instead of angular frequency. The Exercise should read

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  EXERCISE 6.27
  Use a text editor to look at the file and determine how to read it. Write a simple script to read the file, and plot the voltage as a function of time. Then apply the FFT to the data and find the frequency of the tuning fork. (In music, simple frequency f is used rather than angular frequency ω.) That is, plot $|g(f)|$ versus f, and find the largest value of $|g(f)|$.

- Page 338. The vertical axis on Figure 6.19b is mislabeled. It should be "-8 -4 0 4 8". (The caption is correct.)

Chapter 7

- On page 405, the sentence following Equation 7.149 should not be indented.