ERRATA FOR THE FIRST PRINTING
as of August 1, 2013

1. Page 3, lines 3 and 4: The real number $t$ is nonzero and $t \geq 0$ should be replaced by $t > 0$.

2. Page 41, Exercise 3: $M_{2 \times 3}(F)$ should be $M_{3 \times 2}(F)$.

3. Page 45, line 7: $(2, 3, -5)$ should be $(2, -3, 5)$.

4. Page 60, line 6 (line after the second display): $P_2(R)$ should be $P_3(R)$.

5. Page 81, line −1: $j$th column should be $(j + 1)$st column.

6. Page 108, line 1: “finite-dimensional” should be “$n$-dimensional.” ($V$ and $W$ must have the same dimension.)

7. Page 110, lines 2, 3, 4: replace line 2 by “be defined by $\Psi(f) = 0$ if $f$ is the zero function, and” change the period to a comma at the end of the display (line 3), and insert “otherwise.” at the beginning of line 4.

8. Page 127, Exercise 18: $L(S, F)$ should be $F(S, F)$.

9. Page 152, line 3: “matrix” should be replaced by “row operation” at the beginning of the line.

10. Page 168, Exercise 18: “of rank one” (at the end of the exercise) should be “of rank at most one.”

11. Page 170, line 10 (fourth display): upper case $B$ should be lower case $b$.

12. Page 184, line 9: “zeros above” should be “zeros below” (in second line of item 5).

13. Page 210, line −5: Insert “det” before the last matrix.

14. Page 217, bottom matrix: The $(1, 2)$-entry of $M$ should be 3 rather than 4.

15. Page 218, line 4: (4), near the end of the line should be (3).

16. Page 218, line 16 (middle display): The $(1, 2)$-entry of $P$ should be 3 rather than 4.

17. Page 225, Example 1: Change the first variable in the third equation to $x_1$.

18. Page 232, Exercise 28(b): Replace this exercise by “Prove that $N(T)$ contains span($\{y_1, y_1, \ldots, y_n\}$).”

19. Page 255, Figure 5.2: Replace every occurrence of $x$ and $y$ by $v$.

20. Page 255 lines −3, −2: After “conclusion,” insert “let $\beta$ be the standard ordered basis for $\mathbb{R}^2$, ” and replace “we” with “and.”
21. Page 255 line −1: Replace \( \det(T_{\theta} - tI) \) by \( \det([T_{\theta}]_{\beta} - tI_2) \).

22. Page 272, line 16: “eigenvectors of \( \mathbb{R}^2 \) ” should be “eigenvectors of \( A \).”

23. Page 285, line 15: Replace \( \lambda^n \) by \( \lambda^m \).

24. Page 296, line 8 (first display): The inequality \( < \) should be \( \leq \).

25. Page 297, line −3: Replace “Corollary 2” by “Corollary 1.”

26. Page 300, line −17: Exercise 20 should be Exercise 21.

27. Page 300, line −5: Exercise 20 should be Exercise 21.

28. Page 312, line 12: Replace “see Exercise 22” by “This limit exists by Exercise 22 of Section 7.2.”

29. Page 312, Exercise 22: Change “Exercise 21 of Section 7.2” to “Exercise 22 of Section 7.2.”

30. Page 315, line 5: change \((a, b, 0, 0) \in \mathbb{R}^4\)” to \((a, b, 0, 0) \in W.\)

31. Page 323, Exercise 14: Change “less than or equal to” to “less than.”

32. Page 335, line −1: Insert ” i ” after \( 2\pi \) in the denominator.

33. Page 343, line −7: Change “\( W_1 \)” to “\( w_1\).”

34. Page 361, line −1: \( n \) should be replaced by \( k \), in two locations.

35. Page 367, line 1: “vector space” should be “inner product space.”

36. Page 396, Exercise 29(c): Replace this exercise by “Compute \( Q \) and \( R \) as in (b) for the \( 3 \times 3 \) matrix whose columns are the vectors \((1, 1, 0), (2, 0, 1), \) and \((2, 2, 1).\)”

37. Page 407, line 13 (the end of the final display in the proof of Theorem 6.26): \( \sigma_i^2 u_i \) should be \( \sigma_i^2 v_i \).

38. Page 428, third line: Theorem 6.32 should be Theorem 6.33.

39. Page 448, Exercise 6, first line: \( \mathbb{R}^2 \) should be \( \mathbb{R}^2 \times \mathbb{R}^2 \).

40. Page 459, line −10 (last display): \([T_V]_\beta \) should be \([T_v]_\beta \)

41. Page 460, line −3 (display): \([T_V]_\beta \) should be \([T_v]_\beta \)

42. Page 487, lines 3 and 5: The symbol \( K'_{\lambda_i} \) has not been defined. It is intended to denote the generalized eigenspace of \( T_W \) corresponding to \( \lambda_i \). Since it is easily shown that this is actually equal to \( K_{\lambda_i} \), the symbol \( K'_{\lambda_i} \) will be omitted in future printings where it will be observed that \( K_{\lambda_i} \) is the generalized eigenspace of \( T_W \) corresponding to \( \lambda_i \).
43. Page 491, line −15 (end of the proof of Corollary 1): Change “Theorem 7.4(b)” to “Theorem 7.5(b).”

44. Page 496, Exercise 7(e): Replace \( \lambda \) with \( \lambda_i \) in the equation at the end of the exercise (2 places).

45. Page 513, Exercise 18: Assume that \( F = C \).

46. Page 514, Exercise 19: Assume that \( F = C \).

47. Page 530, third line of Theorem 7.20: Replace “choose” by “suppose that there exists a.”

48. Page 532, line −9: \( R(T) \) should be \( R(\phi(T)) \).

49. Page 581, answer to Exercise 2(k) of Section 6.2: The third component of the last vector in the set should be \(-18 + 16i\), and not \(-18 + 6i\).

50. Page 582, answer to Exercise 2(e) of Section 6.4: the corresponding eigenvalues should be \(1, 1, -1, 1\).

51. Page 583, the answer to Exercise 29(c) of Section 6.5:
   a. Replace \( P \) by \( Q \).
   b. The \((1, 3)\)-entry of \( Q \) should be \(-\frac{\sqrt{6}}{6}\).

52. Page 585, the answer to Exercise 1(b) of Section 6.10 should be \( F \) (false).