

ERRATUM for the book **Spectral and High-order Methods with Applications**

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- Page 3: Line 6 from below, change “Chapter 5” to “Section 5”.
- Line 14 on Page 21: “ $S(1, j) = 2$ ” should be changed to “ $S(1, j) = 1$ ”.
- Page 18: In (1.3.14), change “ $\langle T_N, T_N \rangle_{N, \omega}$ ” to “ $(T_N, T_N)_{N, \omega}$ ”.
- Page 22: Replace the relation (1.3.30) by

$$\tilde{u}_k = \gamma_k \sum_{j=0}^N u(x_j) \frac{L_k(x_j)}{L_N^2(x_j)}, \quad k = 0, 1, \dots, N \quad (1.3.30)$$

with $\gamma_k = \frac{2k+1}{N(N+1)}$ for $0 \leq k \leq N-1$ and $\gamma_N = \frac{1}{N+1}$.

- Page 22: In **Problem 2**, replace “ $L_k + L_{k+1}$ ” by “ $(L_k + L_{k+1})/(x+1)$ ”.
- Pages 36 and 37: In (1.5.15), (1.5.16) and the line above (1.5.15), replace “ (\cdot, t) ” by “ (\cdot) ” where “ \cdot ” represents “ x ” or “ k ” or “ x_j ”.
- Page 42: In (1.6.16), change “ u_n ” to “ u^n ”.
- Page 51: In line 12, remove “n” after “as”.
- Page 74: In (2.1.11d), change “ $(\pm 1)^N$ ” to “ $(\pm 1)^{N+1}$ ” in the first relation.
- Page 78: In the line 3 from below, replace “(1.3.11)” by “(1.3.25)”.
- Page 78: In the last line, replace “ $\frac{1}{N(N+1)L_N(x)}$ ” by “ $\frac{-1}{N(N+1)L_N(x_j)}$ ”.
- Page 80: In the last line, replace “ $\frac{N}{2}$ ” by “ $\frac{N}{2} - 1$ ” in the upper summation limit.
- Page 81: In the line 10 from below, replace “ $1 \leq j \leq N-1$ ” by “ $0 \leq j \leq N-1$ ”.
- Page 83: In the second line, change “ $\phi_j(x)$ ” to “ $F_j(x)$ ”.
- Page 83: In the Line after (2.2.9b), add “Let $h = 2\pi/N$.” before “For N even”.
- Page 92: In (2.4.1), replace “ ϵ ” by “ $-\epsilon$ ”.
- Page 96: In CODE PSBVP.3, all a_+ should be changed to b_- .
- Page 99: In (2.5.1), change “ v ” to “ u ”.
- Page 99: In (2.5.3), change “ v ” to “ v_N ”.
- Page 122: Lines 4 and 5 from below, change “ $\bar{u} = (u_0, u_1, \dots, u_{N-2})^T$ ” to “ $\bar{u} = (\tilde{u}_0, \tilde{u}_1, \dots, \tilde{u}_{N-2})^T$ ”.
- Page 130: In the line under (3.6.16), change “ $(N-3) \times (N-3)$ ” to “ $(N-2) \times (N-2)$ ”.
- Page 133: In the line 11 from below, change “ pi ” to “ π ”.
- Page 183: In the line 5 from below, change “producinf” to “producing”.