ERRATUM TO "DIFFERENTIAL FORMS"

Page 89: The proof of Proposition 3.4.4 should read:

Proof. Let ω be a compactly supported n-form with support on W. Then

$$(g \circ f)^{\star}\omega = f^{\star}g^{\star}\omega \,;$$

so

$$\int_{U}(g \circ f)^{\star}\omega = \int_{U} f^{\star}g^{\star}\omega = \deg(f)\int_{V} g^{\star}\omega$$

$$= \deg(f)\deg(g)\int_{W}\omega\,. \qquad \square$$

Page 92: In the second sentence of the paragraph introducing §3.5, "$fU \xrightarrow{\sim} V$" should read "$f : U \xrightarrow{\sim} V$".

Page 98: In the 5th line of the last paragraph: "$f(U) \smallsetminus f(C_f)$" should be replaced by "$V \smallsetminus f(C_f)$".

Page 104: In Exercise 3.6.ii, "S^{2n-1}" should be replaced by "S^{n-1}".

Page 118: The displayed math in the first item of the hint to Exercise 4.1.ix should read "$e_{1,B}, \dots, e_{k,B}$".

Page 135: In Example 4.4.8, the reference should be Exercise 1.9.xi (rather than Exercise 1.9.x).

Page 139: In the equation above Equation (4.4.28), the right hand side should be replaced by

$$\frac{\partial g_i}{\partial x_j}(x_2, \dots, x_n)$$

Page 147: The beginning of Theorem 4.6.1 should read "For $\mu \in \Omega_c^{n-1}(X)$ we have…"

Page 154: The last sentence of the paragraph right after Theorem 4.7.2 should be replaced by: "Hence Theorem 4.7.1 implies Theorem 4.7.2".

Page 172: The assertion in item (6) should start as "If $\omega \in \Omega_c^k(U)$ is closed and $0 < k < n$, then…"

Page 172: The first sentence of paragraph 2 should read "We've already computed some cohomology groups of manifolds in the previous chapters (although we didn't explicitly describe these computations as "computing cohomology")."

Page 174: "Proof of Theorem 5.1.10" should be replaced by "Proof of a special case of Theorem 5.1.10".

Page 175: The third displayed equation should be replaced by

$$\frac{d}{dt} f_t^{\star}\omega = dQ_t\omega + Q_t d\omega$$

Page 177: The end of proof box should appear one paragraph earlier, one line after (5.1.17).

Page 179: In (5.1.25) the bounds of integration are missing. The equation should read

$$Q\omega = \sum_{I,r} \left(\int_0^1 t^{k-1}(-1)^{r-1} x_{i_r} a_I(tx)dt \right) dx_{I_r} \,,$$

Page 182: Two lines above (5.2.4), the phrase "kth cohomology group" should be bold italic.

Page 185: Equation (5.2.12) should be written as

$$Z_3^k \ni c_3^k \mapsto c_1^{k+1} \in Z_1^{k+1} \,.$$

Page 186: In the line after the first displayed equation, the arrow "$\to$" should be replaced by the arrow "$\mapsto$", i.e., the math should read "$[c_3^k] \mapsto [c_1^{k+1}]$".

Page 187: The sequence in Theorem 5.2.21 should be replaced by

$$0 \longrightarrow \Omega^k(U_1 \cup U_2) \xrightarrow{\,i\,} \Omega^k(U_1) \oplus \Omega^k(U_2) \xrightarrow{\,j\,} \Omega^k(U_1 \cap U_2) \longrightarrow 0$$

Page 189: In the long exact sequence of Theorem 5.2.28, the subscript c's should be removed.

Page 189: Equation (5.2.29) should read

$$i \colon \Omega_c^k(U_1 \cap U_2) \to \Omega_c^k(U_1) \oplus \Omega_c^k(U_2)$$

Page 189: In equation (5.2.30), all instances of "i" should be replaced by "α".

Page 189: In the sentence after (5.2.30), the reference should be to equation (5.2.30) instead of (5.2.29), and "U_i." should be replaced by "U_α."

Page 189: In the displayed equation immediately preceding Theorem 5.2.31, all instances of "i" should be replaced by "α". Moreover, the on the second line of that equation, the minus sign should be replaced by "$\smallsetminus$" so that "$(U_1 \cap U_2) - U_i$" is replaced by "$(U_1 \cap U_2) \smallsetminus U_\alpha$".

Page 189: The sequence in Theorem 5.2.31 should be replaced by

$$0 \longrightarrow \Omega_c^k(U_1 \cap U_2) \xrightarrow{\,i\,} \Omega_c^k(U_1) \oplus \Omega_c^k(U_2) \xrightarrow{\,j\,} \Omega_c^k(U_1 \cup U_2) \longrightarrow 0$$

Page 190: The first line of Theorem 5.2.32 should start with "Letting $U = U_1 \cap U_2$ and $V = U_1 \cup U_2$ there exists…".

Page 192: All instances of "U_p^ε" should be replaced by "$U^\varepsilon(p)$". Similarly, all instances of "B_p^ε" should be replaced by "$B^\varepsilon(p)$".

Page 193: "Proof of Theorem 5.3.4" should be replaced by "Proof of Theorem 5.3.12".

Page 194: In Exercise 5.3.i, the term "exhaustion function" should be bold italic.

Page 194: In Exercise 5.3.ii, the commas around "$\phi_0 \colon U \to [0,\infty)$" should be removed.

Page 196: In Exercise 5.3.ix, "Let U_1 be the set: $0 < \theta < \frac{2\pi}{3}$" should be replaced by "Let U_1 be the set of points $(\cos\theta, \sin\theta) \in S^1$ with $0 < \theta < \frac{2\pi}{3}$". The definitions of U_2 and U_3 should be modified in the same way.

Page 200: The justifications in the sentence below the big ladder diagram should be flipped, i.e., it should read "By Mayer–Vietoris the top row of the diagram is exact and by Mayer–Vietoris and Lemma 5.4.8 the bottom row of the diagram is exact."