ERRATA

p. 1 In Definition 1.1.1. insert “(not the zero ring)” after the words “commutative ring”.

p. 8 After Example 1.3.1 include the text “An ideal I of the integral domain D is said to be a finitely generated ideal if $I = < a_1, \ldots, a_n >$ for some $a_1, \ldots, a_n \in D$.”

p. 15 In the first and third displayed equations $vw+ut$ should be replaced by $vw + vt + ut$.

Thanks to Hans Kaas Benner for this correction.

p. 18 In Theorem 1.5.3. I should be a proper ideal of D.

p. 20 In Theorem 1.5.5. I should be a proper ideal of D.

p. 34 The dates of E.S. Barnes should be 1924–2000 and not 1874–1953. Thanks to Prof. Paul M. Cohn for pointing this out.

p. 68 The fourth displayed equation from the bottom should be an equality.

Thanks to Geoff Tims for this correction.

p. 98 In the displayed equation nearest the bottom $c_0+c_1\alpha+\cdots+c_n\alpha^h \neq 0$ should be $c_0 + c_1\alpha + \cdots + c_h\alpha^h \neq 0$

Thanks to Geoff Tims for pointing this out.

p. 112 Line 6 from top should read: Thus $b_n = -\alpha^n - b_1\alpha^{n-1} - \cdots - b_{n-1}\alpha \in I$. Hence ...

Thanks to Geoff Tims for this correction.

p. 122 Change “it is easy to show that” to “one can show”.

p. 126 a^{2n-2} should be replaced by a_n^{2n-2}.

p. 195 In Theorem 8.2.1. and its proof change "nonzero ideal" to "proper ideal" (3 places).

p. 196 In the third line from the bottom include the text "A principal fractional ideal of D is a fractional ideal of the form $\{r\alpha \mid r \in D\}$ for some $\alpha \in K$. We write $<\alpha>$ for this ideal."

p. 200 The proof of the assertion "Since $\tilde{P}_1 A$ is an ideal of D" needs justification.
After "Hence $k \geq 2$." insert :

As D is a Dedekind domain, D is a Noetherian domain, and so by the maximal principle $A \subseteq M$ for some maximal ideal M. M is a prime ideal so $M \supseteq A \supseteq P_1 \cdots P_k$ implies that $M \supseteq P_i$ for some $i \in \{1, 2, \ldots, k\}$. Without loss of generality we may suppose that $M \supseteq P_1$. As P_1 is a prime ideal and D is a Dedekind domain, P_1 is a maximal ideal. Therefore $P_1 = M$. Thus $P_1 \supseteq A$.

After "Hence $A \subset \tilde{P}_1 A$." change to :

Since $\tilde{P}_1 A$ is a fractional ideal and $\tilde{P}_1 A \subseteq D$ as $P_1 \supseteq A$, $\tilde{P}_1 A$ is an integral ideal of D, and by the maximal property of A, we have

$$P_1 A = \tilde{Q}_2 \cdots Q_h$$

for prime ideals $Q_1, \ldots, Q_h$.

Thanks to Prof. Paul Mezo for pointing out this oversight.

p. 237 In Definition 10.1.1 change to: Let p be the rational prime lying below the prime ideal P.

p. 257 In Theorem 10.5.1 after "such that $\bar{f}_i = g_i$" include "and deg(f_i) =deg(g_i)".

p. 262 In question 19 change to "Prove that $\sqrt{\theta} \notin K$."

p. 380 Change to "In this case we understand $R(K)$ to be 1, so that $R(K) > 0$ for all number fields K."

p. 427 The reference to Muskat, J.B. should include page 341. The reference to quadratic field should include page 95.

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