I retired from administration and teaching at the end of 2003, but have remained active in research. It is a pleasure to be able to attend lengthier meetings and workshops during the academic year instead of turning them down because of other obligations.

The notes from Math 301–305 (Analysis) have finally been turned into a textbook. This is my second undergraduate analysis textbook. The first, published by Springer in 1973, tried to use the theory of distributions to make everything easier. It was published in Springer's "Graduate Texts" series and was savaged by an anonymous English reviewer, who read the series title but not the introduction, for not being at graduate level. It has seen little use, even by me.

The new text, *Analysis, an Introduction*, was published by Cambridge in 2004. It is much more classical in approach, and gets to some fun topics including Euler's product formula for $\sin x$, the Banach–Tarski paradox, and the Heisenberg uncertainty principle. Contents:

I am indebted to Mary Pugh, Gerard Misiolek, and José Rodrigo for most of the following corrections. And I am especially indebted to Eric Belsley, whose detailed comments on the notes for chapters 1 – 9 are the chief reason there are so few corrections for those chapters. (The exercises on page 130 were added later!)

Corrections to "Analysis, an Introduction"

p. 6, eqn. (14): (m-n)+(p-q)=(m+p)-(n+q)

p. 7, line 9: . . . and satisfies M1, M2,

p. 26, exercise 2: (ii) $1, x, x^2, \ldots x^n$ are linearly dependent over $\mathbb{Q}$.
exercise 2: (iv) there are real numbers $y_1, y_2, \ldots y_n$ such that . . .

p. 28, line 16: $= |z|^2 + 2\mathrm{Re}\,(z\bar{w}) + |w|^2 \leq \ldots$

p. 66, exercise 4: right side should be $1/(1-z)^{k+1}$.

exercise 5: Under the given assumptions, show there is a power series $\sum_{n=0}^{\infty} b_n z^n$ with radius of convergence at least $R - r$ such that

$$\sum_{n=0}^{\infty} a_n z^n = \sum_{n=0}^{\infty} b_n (z - z_0)^n, \qquad |z - z_0| < R - r.$$

p. 103, line 3: $= f'(c)[g(b) - g(a)] - g'(c)[f(b) - f(a)]$;

line 4: divide by $[\gamma(b) - g(a)]g'(c)$. p. 130, exercise 8: $F(a, b, c; z)$

exercise 9: $F(a, b, b; z)$

exercise 10: $\int_0^1 t^{b-1}(1-t)^{c-b-1}(1-tz)^{-a}\,dt$

p. 137, line 6: $\ldots + m^*((E \cap (A \cup B)) \cap A^c)$

p. 149, line 8: ... for $x \in [0, 1] \cap C^c$ ...

p. 152, line 13: $\int \int (f + g)$ should be $\int (f + g)$

p. 170, line 9: $\{h^* > \delta/2\}, \quad \{h > \delta/2\}$

p. 171, line 5: ... and define a subfamily $\mathcal{I}_{n+1}$ ...

line 6: ... if $\mathcal{I}_{n+1}$ is empty ...

line 11: ... implies that $|I_k| \geq |I|/2$ ...

line -10: ... $I \subset I_n^*$ for some n.

p. 178, equation (17): omit $1/2\pi$

p. 181, line -9: $\sum_{n=0}^{2N} (e^{ix})^n$

line -11: ... as long as $e^{ix} \neq 1$,

p. 183, line 9: $S_N f(x_0) - f(x_0) = \ldots$

line 10: ... $[f(x_0 - y) - f(x_0)]\,dy$

equation (31): $\sin\left(\left[N + \frac{1}{2}\right] y\right)$

p. 186, line -5,-4: ... property (ii) in Proposition 13.9 ...

line -2: $\int_{|y|<\delta}$

line -1: $\int_{\delta<|y|<\pi}$

p. 189, line -4: See Exercise 9 of Section 12D.

p. 192, line 7: $f_N(x) = \sum_{-N}^{N} a_n e^{inx}$

p. 193, line 3: Use Exercise 5 of this section and ...

p. 194, exercise 10: $f(x_0-) = \lim_{x \to x_0, x < x_0} f(x)$; ...

p. 196, exercise 4: $g_n(x) = \ldots$

p. 201, equation (6): $0 \leq t \leq 2\pi$

p. 211, line 5: ... let $I_L = [-\frac{1}{2}L, \frac{1}{2}L]$ ...

line 8: $\int_{-L/2}^{L/2}$

p. 214, exercise 6: $f(x) = \frac{1}{\sqrt{2\pi}} e^{-x^2/2}$

p. 215, exercise 9: ... (assume (46) and use Dominated Convergence).

p. 217, equation (57): $V_T = ||(T - E_T I)\psi||^2$

p. 227, line 11: ... but it may not be unique.

p. 238, proof of Lemma 238. It might seem at first that the sets removed from $\widetilde{A}_2$ and $\widetilde{A}_3$ to form A_2 and A_4 are empty, but there is a nonzero vector that is fixed by σ.

p. 239, statement of Theorem: there should be four B_j' and three C_j': drop C_4' and take

$$B_j' = B_j \cap (D_f \cup D_\infty), \quad j = 1, 2; \qquad B_j' = B_{j-2} \cup D_g, \quad j = 3, 4.$$

Then the first four A_j' correspond to the B_j' and the last three to the C_j'.

Also: $f : D_\infty \to A_\infty$ and $g : A_\infty \to D_\infty$ are bijective (but not inverses of each other).

p. 243, Section 3A: Omit 12, and renumber 13 – 17 as 12 – 16.

p. 251, Section 13B, 6 (b): ...the interval $[b, b + 2\pi)$ ...

p. 252, Section 13G: 1, 2. Use Theorems 13.12 and 13.14 and Proposition 13.4. Note that a continuous periodic function is an L^2–periodic function. For exercise 1 (b), continuity or lack of continuity can be seen by comparison with a multiple of the square wave function in §14A.