The last Math 21b handout on Fourier Series and Partial Differential Equations contains several typographical errors and omissions. The known errors are listed below. Please report any other known or suspected errors to Robert Winters at rwinters@math.harvard.edu.

On page 3, property (2), though technically correct, could better be expressed as

$$< c_1 f(t) + c_2 g(t), h(t) >= c_1 < f(t), h(t) > + c_2 < g(t), h(t) >$$

On page 4, it is probably better to use the term *norm of a function* rather than *length of a function*.

On page 6, in example (1), there is an extraneous comma in the integral $\frac{1}{p}\int_{-p}^{p} \sin nt \sin mt\, dt$. In fact (1), the statement should read:
(1) *If $f_1(t),\ldots,f_n(t)$ are orthonormal, then they form a basis of an n-dimensional subspace*. The reference to $\mathbf{R}^n$ doesn't belong.

On page 10, there's a factor of 2 missing in two successive lines that should be there. The lines are:

$$= 2\sum_{m=0}^{\infty} \frac{(-1)^m}{2m+1}$$
$$= 2(1 - \tfrac{1}{3} + \tfrac{1}{5} - \tfrac{1}{7} + \tfrac{1}{9} - \tfrac{1}{11} + \cdots)$$

Also on page 10, in exercise (2), you should show that $\frac{1}{\sqrt{2}}$ and $\sqrt{\frac{3}{2}}\frac{t}{p}$ are orthonormal.

On page 11, the title should read: **2 Partial Differential Equations I: The Heat Equation**

On page 14, in case (c), the equation should read:

$$u(x) = A\sin lx + B\cos lx$$

On page 19, in problem (6), the boundary conditions should read:

"subject to $\frac{\partial T}{\partial x}(0,t) = \frac{\partial T}{\partial x}(p,t) = 0$ for $t > 0$."

On page 20, about a third of the way down, the two lines should read:

$$u''(x) = au(x) \quad u(0) = 0$$
$$v''(y) = -av(y) \quad v(0) = v(p) = 0$$