CS 661 Requires Calculus-Based Probability

CS 661 students must be comfortable with calculus-based probability. If you haven't taken a course in this or don't remember the material, you will find CS 661 very difficult and probably shouldn't take the class.

Here's a simple test to assess your background in calculus-based probability. Suppose that X is an exponentially distributed random variable with given rate $\lambda > 0$; i.e., the density function of X is $f(x) = \lambda e^{-\lambda x}$ for $x \geq 0$, and $f(x) = 0$ for $x < 0$. Derive the cumulative distribution function (CDF) $F(x) = P(X \leq x)$, the expectation, and the variance of X. (This is asking for the true (population) mean and variance, not the sample mean and sample variance.) If you cannot do this without looking it up in a book, then you probably do not have the appropriate background for CS 661.