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We present analogues of the classical Fourier transform for different time scales. Our definition of the transform differs from that of Hilger, with the intent of preserving familiar algebraic structure of which Hilger's definition does not. We also present an analogue of the Discrete Time Fourier Transform (DTFT) for discrete time scales. Time permitting, we will also deal with the notion of frequency for an arbitrary time scale. This will be a two part talk with B. Jackson. (Received September 25, 2006)