

1135-VV-2248 **Toirna Lewis*** (tlewis@cau.edu), Department of Mathematical Sciences, Clark Atlanta University, Atlanta, GA 30314. *On the Fourier Series of Square Periodic Functions*. Preliminary report.

The “square periodic functions” are derived by inscribing a square whose four vertices intersect the unit circle at the solutions to the equation $z^4 = 1$. To this end we were able to calculate their explicit representation in terms of θ and give plots for these functions; see, Lewis and Mickens, “Square Functions as a Dynamic System” and Mickens, “Some Properties of Square Periodic Functions”. The “square periodic functions” are collectively comprised of the Square Cosine, Square Sine, and Square Dine functions, noted by $S_c(\theta)$, $S_s(\theta)$, and $S_d(\theta)$, respectively. We derive a number of the fundamental properties of these functions. In particular, we demonstrate how to calculate the various Fourier series representation. (Received September 25, 2017)