Power Systems Theory & Design
Theoretical Otto Cycle

Final Exam
open book / notes

Wherever applicable, use methods and input values identical to that given in the class example / handouts.

Part I: Compute $\dot{W}_{net}$ (KWatts), η_{th} (thermal efficiency) and s.f.c. (specific fuel consumption) for values of $V/V_{cc} = 0.70$ to 1.4, inclusive, in increments of 0.10; plot $\dot{W}_{net}$, η_{th}, and s.f.c. vs V/V_{cc} (i.e., three plots). Tabulate results also. Compression ratio in Part I is 9.0 (same as class example and HW).

Part II: For $V/V_{cc} = 1.0$, Compute $\dot{W}_{net}$, η_{th}, & s.f.c. for compression ratios, $r_v = 6.0$ to 12.0, inclusive, in increments of 0.50; plot $\dot{W}_{net}$, η_{th}, and s.f.c. vs r_v (i.e., three plots). Tabulate results also.

Important: A complete assignment must include a discussion of the results.