

MGSC 368v10 Midterm Exam Formula Sheet

Formula Sheet

$$F_t = A_{t-1}$$

$$F_t = F_{t-1} + \alpha(A_{t-1} - F_{t-1})$$

$$F_t = \frac{A_{t-1} + A_{t-2} + A_{t-3} + \dots + A_{t-n}}{n}$$

$$FIT_t = F_t + T_t$$

$$F_t = FIT_{t-1} + \alpha(A_{t-1} - FIT_{t-1})$$

$$T_t = T_{t-1} + \delta(F_t - FIT_{t-1})$$

$$MAD = \frac{1}{n} \sum_{t=1}^n |e_t| = \frac{1}{n} \sum_{t=1}^n |A_t - F_t|$$

$$MSE = \frac{1}{n} \sum_{t=1}^n e_t^2 = \frac{1}{n} \sum_{t=1}^n (A_t - F_t)^2$$

$$TS = \frac{RSFE}{MAD} = \frac{\sum_{t=1}^n e_t}{\frac{1}{n} \sum_{t=1}^n |e_t|}$$

$$Y_{obs} = Index \times Y_d$$

$$C = \frac{\text{Production time per day}}{\text{Output per day}}$$

$$N_t = \frac{T}{C}$$

$$\text{Efficiency} = \frac{T}{N_a \times C}$$

$$\text{Throughput time} = \frac{\text{Work-in-progress}}{\text{Throughput rate}}$$

$$F_t = w_1 A_{t-1} + w_2 A_{t-2} + \dots + w_n A_{t-n}$$