Class 12

QED Q's-Part I: Staffing, Introduction, Erlang-B/C.

QED Q's: Economies of Scale; Staffing Moderate-to-Large Service Operations

- Hierarchical Forecasting/Staffing/Scheduling/Rosteting

    - Statistics: forecasting workloads
    - Queueing models: 1/2-hourly staffing-levels
    - Linear/Integer/Combinatorial programming: shifts, union constraints
    - Heuristics (AI): individual assignments/constraints

- "The" Source: **Erlang**, in 1910-20.

- What can be achieved, but at what cost: motivating the Quality-Driven regime;

- Everyone Waits: The Efficiency-Driven regime;

- *Erlang-B*: discovering the "right" scaling for large service systems (Jagerman);

- *Erlang-C*: The **QED** (Halfin-Whitt) Regime;

- Determining the regimes: Strategy;

- Determining the parameters: Economics;

Recitation 13: Priority Queues.

HW 10: Theoretical Analysis of Service Stations in Steady State. Priority Queues.