



Queue Management and Service Capacity Planning Course: Queueing Models and Counter Staffing



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Introduction:

Queue management and service capacity planning, covering queueing models and counter staffing, is a 5-day course for managers of walk-in service centres, bank branches, hospital outpatient areas and clinics that ends with a Queue and Counter Capacity Plan for a case service centre. Long waits, crowded halls and idle counters at quiet hours usually come from counters opened by habit rather than from arrival data. Nominees already run counters, ticketing or appointment books and work through a modelling build on footfall, ticket and service-time data. CoreConcept Training Center delivers this queue management course.

Course Objectives:

- Profile customer and patient arrivals by hour and weekday from ticketing and footfall data and forecast demand for each service type
- Calculate waiting time, queue length and counter utilisation with Little's law and the M/M/c queueing model
- Determine the number of open counters per hour that meets a waiting-time target using Erlang C and Erlang A
- Design the queue configuration, ticketing rules, appointment slots and virtual queuing options for a walk-in service centre
- Reduce perceived waiting through waiting-area layout, calling displays, wait-time announcements and fair priority rules
- Set waiting-time standards and build a dashboard that tracks average wait, longest wait, abandonment and counter utilisation

Target Audience:

- Service centre operations units responsible for counters, ticketing and daily customer flow in public-facing offices
 - Branch operations units responsible for teller and service desk capacity in retail banking networks
 - Hospital outpatient and clinic administration units responsible for registration desks, appointment books and patient waiting areas
 - Service quality and customer experience units responsible for waiting-time standards and complaint trends
 - Planning and performance units responsible for capacity cases, counter numbers and service centre reporting
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Course Outline:

Day 1: Waiting-Line Diagnosis and Arrival Demand Profiling

- Queue Anatomy of Arrival, Waiting Line, Counter and Exit
- Hourly Arrival Curve From Ticket Dispenser Timestamps
- Service Type Mix and Transaction Duration Sampling Sheet
- Peak Hour and Weekday Demand Forecast for Walk-In Visitors
- Current-State Waiting Time Baseline and Idle Counter Map

Day 2: Queueing Theory Models for Counters and Service Points

- Kendall Notation for Describing Counter Queue Systems
- Little's Law Relating Queue Length, Arrivals and Waiting
- M/M/c Model Outputs for Multi-Counter Service Halls
- Utilisation Thresholds and the Waiting Time Explosion Effect
- Kingman Approximation for Service Time Variability Impact

Day 3: Counter Staffing Calculations and Booking Design

- Erlang C Counter Requirement for a Waiting Target
- Erlang A Adjustment for Walk-Away and Balking Visitors
- Hourly Open-Counter Plan Spreadsheet With Break Cover
- Appointment Slot Length and Walk-In Share Calculation
- Single Serpentine Line Versus Line per Counter Choice

Day 4: Ticketing Systems, Perceived Wait and Waiting-Time Standards

- Queue Management System Ticketing and Number-Calling Rules
- Virtual Queuing With Remote Check-In and Turn Alerts
- Perceived Wait Reduction Through Waiting-Area and Display Design
- Priority Queue Rules for Elderly, Disabled and Urgent Cases
- Waiting-Time Standard and Dashboard With Exception Alerts

Day 5: Modelling Build of the Queue and Counter Capacity Plan

- Case Service Centre Arrival and Service-Time Data Review
 - Case Counter Requirement Model per Hour and Service Type
 - Case Appointment and Virtual Queue Option Testing
 - Case Waiting-Time Standard and Dashboard Prototype
 - Queue and Counter Capacity Plan Completion and Panel Challenge
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Skills You Will Gain:

- Arrival Pattern Analysis
- Queueing Model Application
- Counter Capacity Sizing
- Appointment Slot Design
- Queue Configuration Design
- Perceived Wait Management
- Waiting-Time Performance Reporting

Why Attend This Course:

- Deliver a Queue and Counter Capacity Plan for a case service centre to the operations director and the service quality head as the basis for counter numbers and booking rules
- Decide how many counters to open each hour, what share of visits to book in advance and when to switch on virtual queuing
- Avoid overcrowded halls, visitors walking away unserved, idle counters at quiet hours and capacity spending justified by guesswork
- Equip branch and clinic supervisors with the arrival profile template, counter requirement model, slot calculator and waiting-time dashboard

Conclusion:

Back at work, the participant presents the Queue and Counter Capacity Plan to the operations director, the service quality head and site managers. They use it to approve hourly counter numbers, the split between booked and walk-in visits, ticketing and priority rules and the waiting-time standard each site reports against. After the first month under the plan, the unit should compare actual waits, walk-away rates and counter utilisation with the model and recalibrate arrival and service-time inputs.

Frequently Asked Questions FAQ:

What should participants prepare before the queue management and service capacity planning course?

Participants should already supervise counters, ticketing or appointment books and use spreadsheets with confidence. A few weeks of anonymised ticket timestamps or footfall counts from their own site help them apply the counter models to real arrival patterns.

How does queue management and service capacity planning differ from contact centre or shift rostering courses?

It sizes face-to-face counters, waiting halls and appointment books for walk-in visitors. Contact centre courses manage telephone and digital channels, and rostering courses assign named staff to shift patterns once the required headcount is known.

Why does queue management need queueing models rather than average service times?

Averages hide variability. When counter utilisation approaches its limit, small rises in arrivals produce long waits, and queueing models such as Little's law, $M/M/c$ and Erlang C show how many counters keep waiting within the standard.

What do participants take back from the queue management and service capacity planning course?

Participants take back a Queue and Counter Capacity Plan for a case service centre, with an arrival profile template, counter requirement model, appointment slot calculator, priority rule set and waiting-time dashboard to adapt to their own sites.