



Public Transport Operations Management

Course: Bus Networks, Timetables, Crew Duties and KPIs



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Introduction:

Public transport operations management, covering bus networks, timetables, crew duties and KPIs, is a 5-day course for transit authority, bus operator and metro operations managers that ends with a Network and Timetable Improvement Plan and KPI dashboard for a case bus network. Authorities and operators lose riders and budget when routes overlap, headways ignore loads, vehicle blocks and crew duties waste paid hours and contracts reward kilometres instead of reliable service. Nominees already plan, schedule, run or contract scheduled passenger services and work through case studies built on boarding, running time and performance data. CoreConcept Training Center delivers this public transport operations management course.

Course Objectives:

- Define the separate duties of the transport authority, the operator and the asset owner and record them in a service standards document
- Design a route network structure and set headways, operating span and coverage from peak load point counts and route profiles
- Build clock-face timetables, vehicle blocks and crew duties that cut deadhead running and unproductive paid time
- Organise depot pull-out, spare vehicle ratio, fare products and revenue protection so that scheduled service leaves on time and fares are collected
- Analyse punctuality, excess wait time, lost kilometres, load factor and cost per kilometre and apply them in a bonus-malus operator performance regime
- Produce a Network and Timetable Improvement Plan with a KPI dashboard and a disruption management playbook for a bus network

Target Audience:

- Transit authority teams responsible for service standards, network design and operator contract management
 - Bus operator managers responsible for daily service delivery, depots and vehicle availability
 - Metro and rapid transit operations managers responsible for service control and passenger flow
 - Scheduling and service planning teams that build timetables, vehicle blocks and crew rosters
 - Revenue and passenger service managers responsible for fares, ticket inspection and passenger information
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Course Outline:

Day 1: Public Transport System Roles, Service Standards and Network Baseline

- Authority, Operator and Asset Owner Role Separation Matrix
- Bus, Bus Rapid Transit and Metro Service Hierarchy Mapping
- Service Standards Document Setting Span, Frequency and Coverage
- Route Profile Sheets Using Boardings, Running Times and Loads
- Network Baseline Scorecard From Ridership and Operating Records

Day 2: Route Network Design, Timetabling and Scheduling Methods

- Trunk, Feeder and Grid Network Structure Comparison
- Headway Setting From Peak Load Point Counts
- Clock-Face Timetable Construction With Layover and Recovery Time
- Vehicle Blocking and Deadhead Minimisation in Scheduling Software
- Crew Duty Run-Cutting With Spread Time and Relief Points

Day 3: Depot Operations, Fare Systems, Operator Contracts and Passenger Information

- Depot Pull-Out Plan, Spare Ratio and Vehicle Availability
- Fare Product Structure, Stored-Value Cards and Ticket Validation
- Revenue Protection Inspection Plan and Fare Evasion Rate Survey
- Gross-Cost and Net-Cost Operator Contract Models Compared
- GTFS Timetable Feed and Accessible Stop Information Checks

Day 4: Service Performance Regimes, Reliability Problems and Disruption Control

- Punctuality, Excess Wait Time and Lost Kilometre Indicators
- Load Factor, Cost per Kilometre and Farebox Recovery Ratios
- Bonus-Malus Performance Regime and Deduction Calculation Method
- Bus Bunching Control With Headway Holding and Short-Turning
- Disruption Management Playbook With Diversions and Replacement Buses

Day 5: Case Study: Network and Timetable Improvement Plan for a Case Bus Network

- Case Bus Network Route Profile and Performance Diagnosis
 - Route Restructuring and Revised Headway Proposal Defence
 - Revised Vehicle Blocks and Crew Duty Count Estimate
 - KPI Dashboard Build With Targets and Contract Thresholds
 - Network and Timetable Improvement Plan Completion and Presentation
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Skills You Will Gain:

- Service Standards Setting
- Bus Network Restructuring
- Headway and Timetable Design
- Vehicle Block Scheduling
- Crew Duty Rostering
- Revenue Protection Planning
- Operator Performance Regime Design
- Service Disruption Control

Why Attend This Course:

- Deliver a Network and Timetable Improvement Plan with a KPI dashboard to the head of network planning and the operator contract manager for approval
- Decide which routes to merge, which headways to change and which contract model and deduction rules to apply, using load and reliability evidence
- Avoid bunched buses, missed trips, unpaid fares and contract disputes that cost riders, revenue and operator budget
- Share route profile sheets, blocking templates, inspection plans and disruption playbooks with scheduling, depot and revenue colleagues

Conclusion:

Back at work, the participant gives the head of network planning and the operator contract manager a Network and Timetable Improvement Plan that sets the revised route structure, headways, vehicle blocks, crew duty estimate and KPI dashboard with contract thresholds. The authority uses it to approve the next timetable change and to agree performance deductions with operators, while depot and control staff use its disruption playbook. After the first timetable period under the plan, the unit should review punctuality, excess wait time, lost kilometres, loads and cost per kilometre against the targets.

Frequently Asked Questions FAQ:

What should participants know before a public transport operations management course on bus networks and timetables?

Participants should already plan, schedule, run or contract scheduled bus or metro services and read basic ridership and running time reports. Bringing an extract of their own route profiles, timetable or operator performance report helps them apply the case work to their network.

How does public transport operations management differ from a transport planning or fleet management course?

It concentrates on running scheduled passenger service: networks, headways, timetables, vehicle blocks, crew duties, fares, contracts and service KPIs. Transport planning courses build demand forecasts and appraise investments, and fleet courses cover vehicle ownership, maintenance and replacement, so both appear here only at overview.

Why does public transport operations management measure excess wait time as well as punctuality?

Punctuality suits low-frequency routes where passengers time their arrival, while excess wait time reflects what passengers on frequent routes experience when buses bunch or gaps open. Using both shows whether a schedule is reliable from the passenger side, not only against the timetable.

What do participants take back from the public transport operations management course?

Participants take back a Network and Timetable Improvement Plan for a case bus network, with route profiles, revised headways, vehicle block and crew duty estimates, a KPI dashboard with contract thresholds and a disruption playbook they can adapt to their own services.