



# **Workforce Scheduling and Shift Roster Design Course: Shift Patterns, Fatigue and Labour Hours**



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### **Introduction:**

Workforce scheduling and shift roster design, covering shift patterns, fatigue and labour hours, is a 5-day course for operations planning, rostering and HR teams in round-the-clock organisations that ends with a Shift Roster Design and Staffing Plan for a case site. Hospitals, utilities, security providers, retailers and plants that roster by habit face uncovered posts, rising overtime, breaches of working-hour limits and tired staff on night shifts. Nominees already prepare or approve rosters and work through a modelling build on demand, absence and roster data. CoreConcept Training Center delivers this workforce scheduling course.

### **Course Objectives:**

- Convert hourly or daily demand forecasts into required headcount and full-time equivalents per skill, post and shift
- Design and compare rotating shift patterns, including 8-hour, 10-hour and 12-hour cycles, for coverage, cost and rest quality
- Apply daily and weekly working-hour caps, minimum rest, weekly rest day and overtime limits from the applicable labour law to every roster
- Score draft rosters for fatigue exposure using the Fatigue and Risk Index and redesign high-scoring shift sequences
- Size leave, absence, training and shrinkage buffers and set relief pool and fair rotation rules for nights and weekends
- Specify requirements and evaluation criteria for rostering software with constraint-based optimisation and self-scheduling functions

### **Target Audience:**

- Operations planning teams responsible for matching staffed hours to service demand on round-the-clock sites
  - Rostering and scheduling coordinators responsible for building, publishing and amending shift rosters
  - HR operations teams responsible for working-hour records, overtime approval and leave planning
  - Unit and department supervisors responsible for daily cover, shift swaps and relief staff
  - Time and attendance and payroll teams responsible for hours data, premiums and roster-to-payroll reconciliation
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## **Course Outline:**

### **Day 1: Roster Landscape, Demand Drivers and Current-State Review**

- Workforce Management Cycle From Forecast to Published Roster
- Round-the-Clock Coverage Models in Hospitals, Utilities and Retail
- Roster Cost Drivers Including Overtime, Premiums and Agency Hours
- Historical Volume Data Extraction for Hour-by-Hour Demand Curves
- Current-State Roster Health Check Using Overtime and Vacancy Data

### **Day 2: Scheduling Models, Shift Pattern Families and Rostering Constraints**

- Nurse Scheduling Problem Hard and Soft Constraint Classification
- Three-Crew 8-Hour and Four-Crew 12-Hour Pattern Families
- Two-Two-Three and Four-On Four-Off Rotation Cycle Comparison
- Forward Versus Backward and Fast Versus Slow Rotation Effects
- Fixed, Rotating and Self-Scheduling Models for Mixed Workforces

### **Day 3: Headcount Calculation, Labour-Hour Rules and Roster Building**

- Demand-to-Headcount Conversion With Full-Time Equivalent Formula
- Shrinkage Factor Build for Leave, Sickness and Training Hours
- Working-Hour Cap and Minimum Rest Legality Checklist
- Overtime Limit Tracking and Weekly Rest Day Allocation Rules
- Spreadsheet Roster Template With Coverage Gap Heat Map

### **Day 4: Fatigue Risk, Fairness Controls and Rostering Software Selection**

- Fatigue and Risk Index Scoring of Draft Shift Sequences
- Consecutive Night and Quick Return Limits in Roster Rules
- Relief Pool Sizing and On-Call Arrangements for Absence Spikes
- Weekend and Night Fair Rotation Equity Measurement
- Rostering Software Requirements Matrix and Vendor Demonstration Scorecard

### **Day 5: Modelling Build of the Shift Roster Design and Staffing Plan**

- Case Organisation Demand Profile and Headcount Model Build
  - Case Shift Pattern Options Testing Against Coverage and Cost
  - Case Roster Legality and Fatigue Score Review
  - Case Absence Buffer, Relief Pool and Fairness Rule Set
  - Shift Roster Design and Staffing Plan Completion and Panel Challenge
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## **Skills You Will Gain:**

- Demand-to-Headcount Modelling
- Shift Pattern Design
- Working-Hour Legality Checking
- Fatigue Risk Scoring
- Shrinkage and Relief Planning
- Roster Equity Analysis
- Rostering Software Evaluation
- Overtime Cost Analysis

## **Why Attend This Course:**

- Deliver a Shift Roster Design and Staffing Plan for a case organisation to the operations director and HR head as the basis for the next roster cycle
- Choose between 8-hour and 12-hour patterns, set the relief pool size and decide how many full-time equivalents each post needs
- Avoid uncovered posts, overtime overspend, working-hour breaches and fatigue-related incidents caused by rosters built without demand data
- Equip supervisors and rostering colleagues with the headcount model, legality checklist, fatigue scoring sheet and software scorecard

## **Conclusion:**

Back at work, the participant presents the Shift Roster Design and Staffing Plan to the operations director, the HR head and unit managers. They use it to approve the shift pattern for each unit, agreed headcount and relief levels, roster legality rules and the fatigue limits on night and long shifts, and to decide whether to buy or upgrade rostering software. After the first full roster cycle under the plan, the organisation should compare coverage gaps, overtime hours, absence cover and fatigue scores against the plan and adjust the weaker rules.

## **Frequently Asked Questions FAQ:**

### **What should participants prepare before the workforce scheduling and shift roster design course?**

Participants should already build, approve or check shift rosters and be comfortable with spreadsheets. An anonymised roster sample, an overtime report or a month of demand or activity data helps them apply the modelling build to their own unit.

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## **How does workforce scheduling and shift roster design differ from a contact centre staffing or time study course?**

It covers cross-sector roster design: headcount from demand, shift pattern families, working-hour rules, fatigue scoring, absence buffers and software selection. Contact centre courses focus on queueing formulas for call arrivals, and time study courses measure task times rather than build shift rosters.

## **Why does workforce scheduling and shift roster design need fatigue scoring as well as working-hour limits?**

A roster can respect every hour cap and still create fatigue through quick returns, long runs of nights or backward rotation. Fatigue scoring of shift sequences finds those weak points so planners can redesign them before the roster is published.

## **What do participants take back from the workforce scheduling and shift roster design course?**

Participants take back a Shift Roster Design and Staffing Plan for a case organisation, with a headcount model, shrinkage calculator, pattern comparison sheet, legality checklist, fatigue scoring sheet and rostering software scorecard ready to adapt to their own units.

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