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COURSE BROCHURE

# Historical Trend Analysis Training Course

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Madrid

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Registered in the United Kingdom and Saudi Arabia

# Historical Trend Analysis Training Course

**Ref:** 3285_125218 **Date:** 1 – 5 November 2027 **Location:** Madrid **Fees:** 6200 GBP

Historical Trend Analysis is a 1-week training course for analysts, planners and operations managers who must turn years of recorded activity into a defensible trend findings brief. Organisations hold long histories, yet decisions still rest on recent months or one headline average. Participants at Jupiter Prime Training practise separating lasting movement from seasonal swings, noise and structural breaks in historical trend analysis.

## Why Historical Trend Analysis Matters Now

Three forces shape historical trend analysis today. Longer records from transaction systems reveal patterns once hidden. Leadership teams expect planners to explain why a series moved, not only to report that it did. Volatile conditions create breaks that mislead older averages. An organisation that reads its history well sets capacity, stock and budgets on firm ground; one that reads it badly chases seasonal peaks or ignores a shift until it is costly. The course draws on a standard six-phase data mining process for structuring data understanding and evaluation.

## Who Gains Most from Historical Trend Analysis

- Analysts who prepare monthly and weekly series for performance and planning reports
- Demand and capacity planners who set baselines from past volumes
- Operations managers who judge whether throughput, downtime or service levels are genuinely changing
- Finance and budgeting staff who explain variances against previous periods

A planning or performance unit gains most when several members attend together, sharing one approach to baselines and break dates.

## Historical Trend Analysis Capabilities

Participants read a time series as evidence and state what has changed with honest caveats.

- Prepare a regular, gap-checked time series with documented calendar adjustments — the analyst who must defend the baseline
- Apply trend and seasonality decomposition to separate lasting movement from recurring swings — capacity and stock decisions
- Choose moving averages and exponential smoothing with a stated window and weight — planners setting short-term expectations
- Test for change points and structural breaks before comparing periods — leaders asking whether an initiative worked
- Assess residuals and outliers to judge how much movement is noise — risk and quality owners
- Communicate trend findings with clear charts, uncertainty and plain-language limits — executive sponsors and budget holders

## Key Historical Trend Analysis Terms

- Time series — a sequence of observations of one measure recorded at regular intervals, such as daily orders or monthly energy use.
- Trend component — the long-run direction of a series once seasonal and irregular movement has been removed.
- Seasonality — a pattern that repeats over a fixed calendar period, such as weekly cycles or annual peaks.
- Moving average — the mean of a sliding window of observations, used to smooth short-term fluctuation and reveal direction.
- Change point — a moment where the level, slope or variability of a series shifts and stays shifted.
- Residual — what remains after trend and seasonality are removed; it shows noise, outliers and unexplained events.

## Historical Trend Analysis Day by Day

### Day 1: Framing Questions and Preparing Time Series

- Business Questions and Measure Definitions — What Trend Evidence Leaders Need
- Data Understanding Phase of a Standard Data Mining Process — Fitness of Historical Records
- Regular Intervals, Gaps and Resampling — Comparable Periods Across Years
- Calendar Effects, Working Days and Holidays — Fair Period Comparisons
- Outlier Screening and Event Logs — Keeping or Flagging Unusual Values

### Day 2: Decomposing Trend and Seasonality

- Additive Versus Multiplicative Decomposition — Matching Model to Series Behaviour
- Seasonal Indices and Seasonal Adjustment — Comparing Month With Month
- Locally Weighted Seasonal-Trend Decomposition — Flexible Separation of Components
- Year-on-Year and Rolling Twelve-Month Views — Removing Calendar Repetition
- Residual Diagnostics and Autocorrelation Plots — Checking What Remains Unexplained

### Day 3: Smoothing and Reading Direction

- Simple and Centred Moving Averages — Window Length and Lag Trade-Offs
- Weighted and Exponential Smoothing — Responsiveness Versus Stability of Baselines
- Linear and Piecewise Trend Lines — Stating Slope With Confidence Bands
- Index Numbers and Base Periods — Expressing Growth in Comparable Units
- Control Limits on Smoothed Series — Separating Signal From Routine Variation

### Day 4: Detecting Breaks and Explaining Change

- Cumulative Sum Charts — Early Warning of Sustained Level Shifts
- Change-Point Detection Methods — Dating Structural Breaks in History
- Before-and-After Comparisons With Matched Periods — Judging Initiative Impact
- Driver Annotation and Event Timelines — Linking Breaks to Operational Causes
- Sensitivity Checks on Window and Method Choice — Robustness of Findings

## Day 5: Practising the Trend Findings Brief

- Prepared Series From Participant Data — Applying Day 1 Cleaning Rules
- Decomposition and Smoothing Run on a Live Case — Applying Days 2 and 3
- Break Dating and Cause Annotation — Applying Day 4 Methods
- Trend Charts, Uncertainty Wording and Caveats — Executive Readability
- Trend Findings Brief Completed and Peer Reviewed — Decision Ready Output

## Applying Historical Trend Analysis After the Course

- Rebuild one recurring report on a seasonally adjusted series so commentary separates trend from seasonal effects.
- Run change-point detection on a key operational measure and present dated breaks, with likely causes, to the planning or operations meeting.

## Historical Trend Analysis Questions FAQ

### What is historical trend analysis and why does it matter now?

Historical trend analysis is the disciplined reading of past time series to separate lasting direction from seasonal swings, noise and breaks. It matters now because records are longer and conditions more volatile, so simple averages increasingly mislead planning, budgeting and performance judgements.

### Which roles gain most from historical trend analysis training?

Analysts, planners and operations managers gain most. You benefit if you set baselines from past volumes or must explain whether demand, cost or incident rates have genuinely changed.

### How does historical trend analysis differ from a forecasting course?

Historical trend analysis explains what has already happened; a forecasting course projects what will happen next. Its focus on decomposition and dating breaks gives any later forecast a sound starting point.

### What do you bring back from historical trend analysis training?

You bring back a completed trend findings brief built on your own data. It holds decomposed components, dated change points with likely causes and charts with plain caveats.

## Historical Trend Analysis: The Way Forward

The trend findings brief first informs whether the current baseline used for capacity, stock or budget still reflects reality. Planners use it to agree which movements are lasting. After its first use, revisit the window lengths and break dates as new periods arrive, because a trend reading stays credible only while it is refreshed.