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COURSE BROCHURE

# Refinery Planning and Plan-vs-Actual Reconciliation Training Course

7 – 11 June 2027
New York

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Registered in the United Kingdom and Saudi Arabia

# Refinery Planning and Plan-vs-Actual Reconciliation Training Course

**Ref:** 1407_52601 **Date:** 7 – 11 June 2027 **Location:** New York **Fees:** 9500 GBP

Refinery Planning and Plan-vs-Actual Reconciliation is a 1-week training course for refinery planners, schedulers and process engineers, ending with a monthly reconciliation pack that explains every gap between the planned and achieved margin. Volatile crude differentials mean a plan never checked against meter readings drifts from what the units deliver. Jupiter Prime Training offers this course in refinery planning and plan-vs-actual reconciliation.

## Why Refinery Planning and Plan-vs-Actual Reconciliation Matters Now

Three groups lean on the refinery planning cycle. Crude traders need fast answers on which cargo earns most. Operations wants schedules that respect furnace, hydrotreater and tankage limits rather than optimistic model capacities. Finance asks why reported margin differs from the plan it approved. A site that closes this loop each month finds stale delta vectors, mis-metered streams and blend giveaway before they cost a quarter's profit; others keep buying the wrong crudes. The course draws on linear programming LP practice and monthly mass-balance routines used in refining and petrochemicals.

## Who Gains Most from Refinery Planning and Plan-vs-Actual Reconciliation

- Staff who build and run the monthly LP plan and crude valuation cases
- Staff who turn the plan into daily unit, tank and blend schedules
- Engineers who supply unit yields, constraints and catalyst assumptions to the model
- Staff who close the monthly hydrocarbon mass balance and gain-loss report
- Engineers who explain performance gaps to operations and finance meetings

Planning, scheduling and process engineering groups from one site gain most when they attend together and agree one reconciliation routine.

## Refinery Planning and Plan-vs-Actual Reconciliation Capabilities

Participants trace each margin gap back to a model assumption, a schedule choice or a measurement fault.

- Weigh candidate crudes with breakeven valuation in an LP model — for crude purchasing
- Specify unit capacities, delta vectors and blend limits — for model credibility with operations
- Build a feasible schedule from the monthly plan — for tank and unit supervisors
- Calculate blend giveaway and gross margin by product — for commercial colleagues
- Test plan yields against metered mass balance — for the monthly finance review
- Communicate gap drivers in a short reconciliation pack — for site leadership

## Key Refinery Planning and Plan-vs-Actual Reconciliation Terms

- Linear programming model — a refinery model that chooses crudes, unit modes and blends to maximise margin within stated limits.
- Delta vector — a set of yield shifts in the LP that adjusts output when feed quality changes.
- Breakeven crude value — the price at which a crude earns the same margin as the reference crude in the plan.
- Blend giveaway — product quality delivered beyond the specification, which gives value away to the buyer.
- Hydrocarbon mass balance — the monthly accounting of feed, products, stock change and losses across the site.
- Backcasting — rerunning the LP with actual feeds and unit rates to separate model error from operating gaps.

## Refinery Planning and Plan-vs-Actual Reconciliation Day by Day

### Day 1: The Planning Cycle and Its Stakeholders

- Monthly Planning Calendar From Crude Nomination to Close — Setting Handover Points
- Trading, Operations and Finance Expectations — Agreeing What the Plan Must Answer
- Refinery Configuration and Unit Constraint Register — Capturing Real Limits
- Crude Differentials and Product Cracks — Reading Market Signals for the Month
- Planning Key Performance Indicators — Choosing What Reconciliation Will Measure

### Day 2: Linear Programming Models and Crude Selection

- LP Matrix Structure of Rows, Columns and Bounds — Reading Model Outputs
- Crude Breakeven and Marginal Values — Ranking Cargo Offers
- Delta Vectors and Base Yields — Keeping Model Yields Current
- Shadow Prices on Unit Capacities — Finding the Binding Constraint
- Case Comparison and Sensitivity Runs — Testing Crude Slate Choices

### Day 3: Scheduling and Product Blending

- From Monthly Plan to Daily Schedule — Sequencing Unit Rates and Modes
- Tankage and Crude Segregation Limits — Avoiding Infeasible Schedules
- Gasoline and Diesel Blend Recipes — Meeting Octane, Sulphur and Cold Flow
- Blend Giveaway Tracking — Recovering Lost Margin on Quality
- Schedule Revisions After Unit Upsets — Rebalancing Intermediate Stocks

### Day 4: Reconciling Plan With Actual

- Monthly Hydrocarbon Mass Balance and Gain-Loss — Trusting the Metered Numbers
- Yield Comparison by Unit — Separating Feed Quality From Operating Effects
- LP Backcasting With Actual Feeds — Isolating Model Error
- Margin Bridge From Plan to Actual — Quantifying Price, Volume and Yield Effects
- Model Update Log — Feeding Lessons Into Next Month's Plan

## Day 5: Practising the Monthly Reconciliation Pack

- Constraint Register Review for a Sample Refinery — Applying Day 1
- Crude Choice Case Run and Ranking — Applying Day 2 LP Methods
- Blend and Schedule Exercise — Applying Day 3 Recipes and Limits
- Mass Balance and Margin Bridge Exercise — Applying Day 4 Routines
- Monthly Reconciliation Pack Drafting — Gaps, Causes, Owners and Model Changes

## Applying Refinery Planning and Plan-vs-Actual Reconciliation After the Course

- Run a backcast of last month's LP plan with actual crude receipts and unit rates.
- Build a margin bridge for one product line and present it at the monthly planning meeting.

## Refinery Planning and Plan-vs-Actual Reconciliation Questions FAQ

### What is refinery planning and plan-vs-actual reconciliation and why does it matter now?

It is the monthly cycle of building an LP plan, scheduling it and checking results against metered output. It matters now because crude prices move fast and unchecked models lead to poor cargo choices.

### Which roles gain most from refinery planning and plan-vs-actual reconciliation?

Refinery planners, schedulers and process engineers gain most, especially those who prepare the monthly plan, issue daily schedules or report yield and margin performance.

### How does refinery planning and plan-vs-actual reconciliation differ from an advanced yield optimisation course?

This course centres on the monthly planning loop and closing gaps between plan and actual. An advanced yield optimisation course goes deeper into unit severity, catalysts and cut-point engineering.

### What do you bring back from refinery planning and plan-vs-actual reconciliation training?

You bring back a draft reconciliation pack for your site with a margin bridge, mass-balance checks and a list of model updates to make before next month.

## Refinery Planning and Plan-vs-Actual Reconciliation: The Way Forward

The monthly reconciliation pack first informs which model assumptions to correct before the next crude nomination. Planners use it to update delta vectors, schedulers to adjust tank strategy and finance to follow margin movements. After its first use, revisit the threshold for what counts as a material gap, separating real variances from metering noise.