

2-Week Construction Delay Analysis for Project Success

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Overview

Major infrastructure and building initiatives routinely encounter programmatic deviations that jeopardize milestone completion dates and generate substantial financial exposure. This course equips commercial and technical practitioners with the quantitative techniques and contractual foundations required for rigorous construction delay analysis across complex works. Participants examine schedule network logic, evaluate critical path movement, establish liability, and substantiate defensible extension of time submissions. The curriculum addresses prospective and retrospective forensic methods, productivity disruption, float ownership, and delay concurrency. This course is delivered by Agile Leaders Training Center.

Who Should Attend

This program is designed for project professionals who evaluate schedule variance, draft commercial claims, or oversee contractor obligations.

- Project managers and construction superintendents overseeing critical schedule delivery
- Planning and scheduling engineers responsible for Critical Path Method baseline integrity
- Delay analysts, claims consultants, and forensic scheduling specialists
- Contract administrators, commercial managers, and quantity surveyors
- In-house legal counsel, dispute specialists, and employer project representatives

Targeted Organizational Departments

The methodologies taught during this program support organizational divisions tasked with project governance, commercial protection, and schedule control.

- Project Controls and Planning
- Contracts and Procurement
- Commercial Management and Claims
- Engineering and Construction Delivery
- Legal and Dispute Resolution
- Program Management and PMO

Learning Objectives

By the conclusion of this two-week program, participants will be able to:

- Classify project schedule deviations by criticality, excusability, and compensability.
- Establish contractual entitlement for extension of time claims and prolongation costs.
- Audit project baseline schedules for network integrity, constraints, and logic validity.
- Apply the Critical Path Method to determine float consumption and critical path shifts.
- Assemble contemporaneous project records into verified delay event chronologies.
- Perform comparative As-Planned vs As-Built and Impacted As-Planned methodologies.
- Execute contemporaneous Time Impact Analysis and retrospective Windows Analysis.
- Implement Collapsed As-Built subtractive modeling on complex schedule networks.
- Assess concurrent delay disputes and determine primary causative drivers.
- Quantify disruption and labor productivity loss using the Measured Mile approach.
- Select the appropriate forensic methodology in alignment with the SCL Delay and Disruption Protocol.

Course Agenda

Day 1: Delay Classification and Contractual Entitlement

- Schedule delay fundamentals, project failure mechanisms, and baseline risk
- Categorizing delay events into critical versus non-critical classifications
- Contractual definitions of excusable, non-excusable, and compensable impacts
- Allocating delay responsibility among employer, contractor, and neutral third parties
- Establishing core principles governing extension of time entitlement
- The end-to-end delay claim lifecycle from initial notice to dispute resolution
- Practical review of delay classification frameworks and entitlement tests

Day 2: Construction Programming and Baseline Validation

- Work breakdown structures and schedule development standards
- Activity duration modeling, dependencies, and network sequencing logic
- Critical Path Method mathematics and network scheduling calculations
- Executing forward pass, backward pass, and float calculations
- Analyzing total float, free float, contractual constraints, and milestone dates
- Auditing baseline schedules for structural logic and forensic suitability
- Practical evaluation of baseline integrity for forensic schedule analysis

Day 3: Contemporaneous Records and Schedule Evidence

- Establishing protocols for timely delay event identification
- Progress monitoring mechanisms and schedule update verification
- Contemporaneous record-keeping standards and evidentiary weight
- Managing notices, site instructions, RFIs, change logs, and daily journals
- Correlating delay causes directly to measurable schedule consequences
- Constructing an auditable, evidence-backed delay event chronology
- Practical review of documentation compilation for forensic claims

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Day 4: As-Planned vs As-Built and Impacted As-Planned Analysis

- Core concepts of As-Planned vs As-Built schedule comparisons
- Validating actual start, finish, and sequence data to build As-Built networks
- Comparing planned execution against real project performance variance
- Isolating critical path deviations and discrete delay windows
- Impacted As-Planned analysis structure and fragnet modeling techniques
- Inserting delay fragnets into un-updated baseline schedules
- Practical review of strengths and limitations in comparative models

Day 5: Time Impact Analysis and Windows Analysis

- Procedural rules and operational steps of Time Impact Analysis
- Selecting representative schedule updates and establishing valid data dates
- Developing, validating, and inserting delay fragnets into contemporaneous schedules
- Windows Analysis principles and chronological time-slice segmentations
- Monitoring critical path migration across successive project windows
- Applying prospective and contemporaneous forensic analysis models
- Practical comparison of Time Impact Analysis and Windows techniques

Day 6: Collapsed As-Built and Retrospective Forensic Methods

- Principles governing retrospective forensic schedule reconstruction
- Collapsed As-Built methodology and delay subtraction techniques
- Distinguishing between additive and subtractive schedule modeling
- Extracting specific employer-caused delay events from As-Built data
- Analytical limitations, subjective risks, and procedural objections to delay extraction
- Method selection criteria based on records, budget, and contractual stipulations
- Practical methodology selection mapping exercises

Day 7: Critical Path Movement, Float, and Concurrency

- Dynamic critical path tracking throughout delayed project lifecycles
- Managing critical path shifts caused by contractor performance and employer delays
- Total float ownership theories and contractual implications of float consumption
- Formulating delay claims rooted in improper float appropriation
- Concurrent delay legal principles, causative tests, and pacing concepts
- Analyzing concurrent impacts on divergent or parallel schedule paths
- Practical allocation of responsibility in concurrent delay scenarios

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Day 8: Disruption Quantification and Prolongation Cost Claims

- Differentiating critical delay impact from operational disruption and inefficiency
- Proving cause-and-effect links in loss-of-productivity claims
- Quantifying productivity loss through the Measured Mile methodology
- Alternative disruption calculations including baseline productivity comparisons
- Calculating time-related site overheads and head office prolongation costs
- Evaluating global claims, modified total cost approaches, and associated risks
- Practical integration of schedule delay metrics with commercial cost calculations

Day 9: The SCL Protocol, Mitigation, and Acceleration

- Core tenets and guidance of the SCL Delay and Disruption Protocol
- Distinguishing prospective assessment from retrospective factual analysis
- Protocol guidance on record governance, float allocation, and concurrency
- Contractor duty to mitigate delay impacts and recovery schedule requirements
- Constructive and directed acceleration mechanisms and cost recovery rules
- Commercial solutions for resolving schedule disputes during ongoing works
- Practical alignment of project controls with recognized industry protocol guidance

Day 10: Delay Reporting, Claims Defense, and Capstone Case Study

- Structuring clear, defensible forensic delay analysis expert reports
- Graphical presentation standards for schedule logic, events, and critical paths
- Synthesizing causation narratives, timeline evidence, and financial claims
- Preparing defensible delay claim submissions for commercial negotiations
- Presenting technical delay findings during adjudication and formal dispute hearings
- Integrated capstone project: Forensic analysis, method selection, and presentation
- Final evaluation and professional delay analysis debrief

Practical Toolsets and Analytical Approaches

Throughout the training, participants explore analytical models and execution frameworks applied by forensic schedulers.

- Baseline schedule audit checklists and logic validation matrices
- Delay event registers linking notices, correspondence, and technical records
- Method selection flowcharts aligned with evidentiary availability and contract terms
- Fragnet modeling procedures for Time Impact Analysis calculations
- Disruption quantification workbooks applying Measured Mile comparisons
- Forensic reporting templates organizing cause, effect, and contractual liability

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Frequently Asked Questions

What specific qualifications are needed before enrolling?

A background in project management, construction, or contracts is preferred. Scheduling or claims experience will enhance understanding.

How long is each day's session and total duration?

Each session lasts 4–5 hours, including interactive workshops and exercises. The total course spans 2 weeks 40–50 hours.

Does the course include practical software demonstrations?

Yes, participants will use MS Project and similar tools to perform delay analysis methods in construction and project scheduling and delay management exercises.

How This Course is Different from Other Delay Analysis Programs

This two-week program integrates forensic schedule analysis, construction programming, claims management, disruption assessment, and contractual entitlement into a cohesive professional curriculum. It examines core forensic techniques, including As-Planned vs As-Built, Time Impact Analysis, Windows Analysis, Collapsed As-Built, float ownership, and Measured Mile productivity calculations.

Rather than focusing exclusively on basic scheduling mechanics, the course links critical path modeling directly with extension of time claims, prolongation cost evaluation, acceleration impacts, SCL Delay and Disruption Protocol standards, and structured forensic reporting through schedule-based exercises.

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