PLANNING MASTERY: FROM FUNDAMENTALS TO EXPERTISE SYLLABUS

Level: 1 **Duration:** X:XX

Course Name	Lessons	Duration
Before Planning Begins	3	1:15

1. Prepac® Systems Methodology (Preparation & Packaging)
   - Explain how Prepac® Systems Methodology (PSM) assists planning services before planning begins
   - Identify key aspects of PSM.
   - Recognize how PSM helps planning services control key deliverables to enhance its customers' safety and performance.
   - Explain how Scope of Work and Order creation are used as a pre-requisite to planning.
   - Explain scope-of-scope versus scope of work and how it's defined.
   - Recall the key areas in which field visits can contribute value to planning.

2. Basic Job Package Design and Quality Control
   - Describe the elements of basic job package design and the minimum standards required to assemble it.
   - Assemble a quality job package to add measurable value to planning service's customers, in a consistent, controlled, and timely manner.
   - Recall the quality control method of job package assembly, review, approval, distribution, and follow up during post execution.

3. Building Safety into the Plan
   - Evaluate safety principles and related loss management and risk mitigation for job planning and package assembly for heavy industry maintenance and projects.
   - Apply safety planning and risk mitigation using a formal Job Hazard Assessments (JHA) for an incident- and injury-free (IIF) workplace.
   - Implement Hierarchy of Controls as a method of identifying and ranking safeguards to protect workers from hazards.

Job Package Assembly Pre-Work	5	3:05

1. Field Walks - The First Step to Set-Out Plans
   - Explain the purpose and benefits of conducting field walks in project planning.
   - Identify the key team members for a field walk and understand their roles.
   - Determine the optimal timing for field walks within the planning process.

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- Integrate field walk findings effectively into project plans and work packages.

2. Understanding Engineering Documentation for Effective Work Planning
   - Locate information in documentation in a timely manner
   - Collaborate with your coworkers when they refer to different documents
   - Engage actively in planning and problem-solving processes

3. Reading and Interpreting P&IDs and PFDs
   - Read and interpret Piping and Instrumentation Diagrams (P&IDs) and Process Flow Diagrams (PFDs) of a process plant by developing the minimum necessary skills.

4. Redline and Markups
   - Utilize as-built documentation in process plants to ensure accurate and efficient operations.
   - Explain the differences between redlining and markup processes and how they are used.
   - Identify key stakeholders and their responsibilities in the documentation process.
   - Apply best practices for redlining and markup in various project phases.

5. Photos as Planning & Execution References
   - Utilize visual documentation in maintenance and capital projects to ensure project success and understand its importance.
   - Select appropriate equipment and apply basic photography principles to capture clear, informative work scope images.
   - Implement safety measures and pre-shot planning strategies to ensure efficient and secure photography in industrial settings.
   - Effectively document specific conditions, equipment, and project progression while adhering to legal and confidentiality requirements.

Job Planning Fundamentals - Part 1: Detailed Planning 3 X:XX

1. Detailed Planning with Prepac® Systems Methodology (PSM)
   - IN DEVELOPMENT

2. Creating Effective Step-out Plans
   - Recall the fundamentals of creating effective step-out plans for heavy industry maintenance and projects to support workface customers with safety, quality, and efficiency target performance deliverables.
   - Recognize how standards, templates, tools, and technology are used to create effective, consistent step-out plans: field-to-office methodology.

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- Discuss the value of continuous improvement for enhanced detailed planning and estimating of formal step-out plans.

3. Estimating Fundamentals and Standards
   - IN DEVELOPMENT

Job Planning Fundamentals- Part 2: Materials Management	5	3:25

1. Basic Materials Management for Planners
   - Conduct effective field walks and work scope validation, translating observations into accurate job task breakdowns and Bills of Materials (BoMs).
   - Identify and manage long-lead items, developing strategies to mitigate their impact on project schedules and costs.
   - Navigate the requisition process for goods and services, creating accurate and complete requisitions while effectively tracking their progress.
   - Utilize the materials reservation processes to ensure timely allocation of resources and minimizing conflicts.
   - Apply best practices in materials receiving, kitting, and preservation techniques to maintain quality, prevent degradation, and enhance overall project efficiency.

2. Introduction to Bill of Materials
   - Producing accurate BOMs in process plant operations.
   - Creating and managing BOMs for various scenarios, including routine maintenance, plant turnarounds, and capital projects.
   - Integrating BOM management with various business systems
   - Optimizing material management across different operational contexts.

3. Part 1 – Fundamentals and Plant Specifics of Bill of Materials
   - Define what a Bill of Materials (BOM) is and describe its primary purposes in process plants.
   - Identify and differentiate between the various types of BOMs.
   - Explain the hierarchical structure of a BOM
   - Recognize the unique considerations for BOM management specific to chemical, mining, and refinery operations.
   - Describe the impact of industry standards and regulatory requirements on BOM management in process plants.
   - Identify software and systems commonly used for BOM management in process plants.

4. Part 2 – Choose Your Area of Interest (*45 min per topic*). Options available to choose from include:
   - BOM for Routine Maintenance
     - Define the role of Bill of Materials (BOM) in routine maintenance activities within process plants.

- Explain the significance of aligning BOMs with preventive maintenance strategies.
- Identify and categorize critical spare parts necessary for maintaining plant reliability.
- Demonstrate effective inventory management techniques to optimize parts availability and minimize carrying costs.
- Apply best practices for managing BOMs to enhance maintenance efficiency and reduce downtime.

- BOM for Turnarounds
  - Identify the goals and extent of work necessary for aligning BOM creation with the turnaround work breakdown structure.
  - Differentiate between major and minor turnarounds and adjust BOM detail and scope accordingly.
  - Manage long-lead items early in the process by reviewing historical data and mitigating associated risks.
  - Incorporate long-lead items into project schedules and BOMs to ensure timely procurement and availability.
  - Recognize the need to develop comprehensive turnaround BOMs that integrate lessons learned and vendor requirements.
  - Establish change control processes for BOM modifications and effectively communicate changes to relevant stakeholders.
  - Track and document BOM revisions to reconcile planned versus actual material usage for future improvements

- BOM for Capital Projects
  - Explain the nuances of Bill of Materials (BOM) and their significance for project success and cost control.
  - Integrate BOMs effectively into capital project workflows to enhance project execution.
  - Manage changes to BOMs during project execution to maintain project integrity.
  - Implement lifecycle BOM management strategies to improve project execution and cost control.
  - Facilitate the transition from project BOMs to operational BOMs for seamless operational phases.

5. Part 3 – Intergration with Other Systems and Best Practice
   - Define the integration BOMs with enterprise systems and explain its significance for operational optimization.
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   - Analyze the impact of effective BOM management on operational efficiency, cost reduction, and strategic planning.
   - Evaluate best practices for BOM management, including standardized naming conventions and data quality metrics.
   - Discuss the advantages of adopting emerging technologies in BOM management to meet evolving operational needs.

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Course Name	Lessons	Duration
Job Planning Fundamentals - Part 3 1. X ○	3	60
Job Planning & Package Assembly - LAB 1. Learn to Build a Basic Work Package (exercise)	1	60