PDE PROVIDER

Professional Development for the Expert

Course Title

Foundation of Work Breakdown Structure

Instructor

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Credit	Questions
1 PDE	10

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1. What is a WBS?

A Work Breakdown Structure (WBS) is a hierarchical decomposition of the total scope of work required to complete a project successfully. It organizes and defines the entire project scope into smaller, more manageable components.

According to the PMBOK Guide, the WBS is a fundamental tool in Project Scope Management.

1.1 Principle

The WBS answers one essential question: *What deliverables must be produced to complete this project?"*

It does not focus on:

- When the work will be done (schedule)
- How much it will cost (budget)
- Who will do it (resources)

1.2 Key Characteristics

- Deliverable-oriented: Focuses on outputs, not activities
- Hierarchical: Structured from general to detailed
- Comprehensive: Covers the entire project scope
- Progressively elaborated: Developed in increasing detail

1.3. Importance of WBS

A well-defined WBS:

- Prevents scope creep
- Enhances team understanding
- Supports accurate estimation
- Improves project control
- Facilitates accountability

Without a WBS, projects often suffer from confusion, missed scope elements, and poor planning.

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2. Levels of WBS

2.1. A typical WBS includes multiple levels:

1. Level 1: Entire project
2. Level 2: Major deliverables
3. Level 3: Sub-deliverables
4. Level 4: Work packages

Each lower level provides more detail.

2.2. Work Packages

A work package is the lowest level in a WBS and is critical because it:

- Can be assigned to a person or team
- Can be estimated (time & cost)
- Can be monitored and controlled

👉 Think of it as the "manageable unit of work."

2.3. The 100% Rule

$$\text{Project Scope} = 100\% = \sum \text{All WBS Components}$$

This rule ensures:

- All project work is included
- No extra work is added
- Sub-elements fully represent their parent element

This is one of the most tested concepts in CAPM.

2.4. WBS Dictionary

The WBS Dictionary complements the WBS by providing detailed descriptions:

- Scope of each element
- Deliverables and acceptance criteria
- Responsible parties

- Cost and schedule information

👉 It transforms the WBS from a structure into a fully usable management tool.

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3. Developing the WBS

3.1. Step-by-Step Process

1. Review project scope statement
2. Identify major deliverables
3. Break down deliverables (decomposition)
4. Define work packages
5. Validate completeness with stakeholders

3.2. Decomposition Explained

Decomposition is the process of breaking down deliverables into smaller parts until they are manageable.

Example:

Project → System → Modules → Features → Work Packages

3.3. Types of WBS

1. Deliverable-based WBS
    - Most common in CAPM
    - Organized around outputs
2. Phase-based WBS
    - Organized around project phases
    - Example: Initiation → Planning → Execution

3.4. Coding Structure

Each WBS element is often assigned a code (e.g., 1.1.2) to:

- Track work easily
- Link with cost accounts

- Integrate with schedules

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4. WBS in Project Integration

4.1. Scope Baseline

The WBS is a key part of the scope baseline, which includes:

- Project Scope Statement
- WBS
- WBS Dictionary

👉 This baseline is used to measure project performance.

4.2. Relationship with Other Project Tools

Tool	Role
WBS	Defines scope
Schedule	Defines timeline
Budget	Defines cost
Risk Register	Identifies risks

4.3. WBS and Cost Estimation

Costs are often estimated at the work package level, then aggregated upward.

This ensures:

- Better accuracy
- Improved control
- Clear traceability

4.4. Responsibility Assignment

WBS is often linked to:

- Responsibility Assignment Matrix (RAM)
- RACI charts

This ensures each work package has a clear owner.

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5. Best Practices & Exam Focus

5.1. Best Practices

- Focus on deliverables, not activities
- Follow the 100% rule strictly
- Avoid over-decomposition
- Involve stakeholders
- Use consistent level of detail

5.2. Common Mistakes

- Mixing tasks and deliverables
- Missing scope elements
- Creating too many levels
- Not validating the WB