

23CE702 : PROJECT MANAGEMENT

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NARSIMHA REDDY ENGINEERING COLLEGE
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UNIT IV

Project Planning and Control

- **Topics Covered**
- Project Planning Steps
- Scheduling
- Network Diagrams
- Network Analysis
- Critical Path Method (CPM)
- Quality Management
- Project Execution
- Project Monitoring and Control
- Agile Project Management
- Scrum Framework
- Lean Production and Project Management

Learning Outcomes

- After completing this unit, students will be able to:
- Explain project planning and scheduling.
- Construct simple project network diagrams.
- Identify the critical path of a project.
- Understand quality management principles.
- Explain project execution and monitoring.
- Describe Agile, Scrum, and Lean Project Management.

Project Planning

- **Definition**
- Project Planning is the process of defining project objectives and determining the activities, resources, budget, and schedule required to complete the project successfully.
- **Objectives**
- Define project scope
- Allocate resources
- Estimate project duration
- Prepare project schedule
- Minimize risks

Steps in Project Planning

- Define Project Objectives
- Identify Activities
- Develop Work Breakdown Structure (WBS)
- Estimate Resources
- Prepare Budget
- Schedule Activities
- Identify Risks
- Finalize Project Plan

Project Scheduling

- **Definition**
- Scheduling is the process of assigning start and finish dates to project activities.
- **Importance**
- Timely completion
- Efficient resource utilization
- Cost control
- Progress tracking
- Avoid delays
- **Common Scheduling Tools**
- Gantt Chart
- Milestone Chart
- Network Diagram

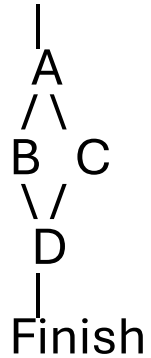
Network Diagrams

- **Definition**
- A Network Diagram is a graphical representation showing the sequence and dependency of project activities.
- **Types**
- Activity-on-Arrow (AOA)
- Activity-on-Node (AON)
- **Benefits**
- Identifies dependencies
- Improves scheduling
- Helps find the critical path

Network Diagram

- **Example Network Diagram**

- Start



- **Key Terms**

- Activity
- Event
- Dependency
- Duration

Network Analysis

- **Definition**
- Network Analysis is a project planning technique used to determine the sequence of activities and optimize project completion time.
- **Objectives**
 - Minimize project duration
 - Optimize resources
 - Identify critical activities
 - Improve planning
- **Techniques**
 - CPM (Critical Path Method)
 - PERT (Program Evaluation and Review Technique)

Critical Path Method (CPM)

- **Critical Path Method (CPM)**
- **Definition**
- The Critical Path is the longest path through a project network that determines the minimum project completion time.
- **Characteristics**
- Longest duration
- Zero float/slack
- Delay affects entire project

Quality Management

- **Definition**
- Quality Management ensures that the project meets customer requirements and quality standards.
- **Objectives**
- Customer satisfaction
- Error prevention
- Continuous improvement
- Compliance with standards
- **Components**
- Quality Planning
- Quality Assurance
- Quality Control

Quality Management Process

- Quality Planning
 - ↓
 - Quality Assurance
 - ↓
 - Quality Control
 - ↓
 - Continuous Improvement
- **Benefits**
 - Reduced defects
 - Lower costs
 - Improved customer confidence

Project Execution

- **Definition**
- Project Execution is the phase where planned activities are performed to produce project deliverables.
- **Activities**
 - Team management
 - Resource allocation
 - Communication
 - Procurement
 - Stakeholder engagement

Project Monitoring and Control

- **Definition**
- Monitoring and Control involve tracking project performance and taking corrective actions when necessary.
- **Monitoring Includes**
 - Schedule performance
 - Budget performance
 - Quality performance
 - Risk monitoring
 - Scope control
- **Tools**
 - Progress Reports
 - Earned Value Management (EVM)
 - Dashboards

Agile Project Management

- **Definition**
- Agile is an iterative project management approach that delivers work in small increments with continuous customer feedback.
- **Agile Principles**
- Customer collaboration
- Respond to change
- Continuous improvement
- Frequent delivery
- **Advantages**
- Flexibility
- Faster delivery
- Better customer satisfaction

Scrum Framework

- **Definition**
- Scrum is an Agile framework used to manage complex projects through short development cycles called Sprints.
- **Scrum Roles**
- Product Owner
- Scrum Master
- Development Team
- **Scrum Events**
- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective

Lean Production and Project Management

- **Definition**
- Lean Production is a methodology focused on maximizing customer value while minimizing waste.
- **Lean Principles**
- Eliminate waste
- Continuous improvement
- Respect for people
- Deliver value
- Improve workflow
- **Benefits**
- Lower cost
- Faster delivery
- Higher quality
- Better productivity

Summary

- ✓ Project Planning
- ✓ Scheduling
- ✓ Network Diagrams
- ✓ Network Analysis
- ✓ Critical Path Method (CPM)
- ✓ Quality Management
- ✓ Project Execution
- ✓ Monitoring and Control
- ✓ Agile Project Management
- ✓ Scrum Framework
- ✓ Lean Production