Postgraduate Certificate in International Construction Management

Project Planning and Control

Project Planning and Control Key Terms and Vocabulary

Project planning and control are essential elements in the successful delivery of construction projects. This course, Postgraduate Certificate in International Construction Management, focuses on equipping students with the knowledge and skills necessary to effectively plan, execute, and control construction projects on a global scale. To excel in this field, it is crucial to understand the key terms and vocabulary associated with project planning and control. Below is an extensive explanation of these terms:

1. Project Management: Project management involves the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. It includes initiating, planning, executing, monitoring, controlling, and closing a project.

2. Project Planning: Project planning is the process of defining the scope, objectives, and activities required to complete a project successfully. It involves creating a comprehensive project plan that outlines the tasks, resources, timelines, and deliverables.

3. Work Breakdown Structure (WBS): A WBS is a hierarchical decomposition of the total scope of work to be carried out by the project team. It breaks down the project into smaller, manageable components, making it easier to plan, schedule, and control.

4. Gantt Chart: A Gantt chart is a visual representation of a project schedule that shows the start and finish dates of various project tasks. It helps project managers and team members understand the timeline of the project and identify dependencies between tasks.

5. Critical Path Method (CPM): CPM is a project management technique used to determine the longest sequence of dependent tasks and the shortest time needed to complete a project. It helps identify critical tasks that cannot be delayed without impacting the project's overall timeline.

6. Resource Allocation: Resource allocation involves assigning resources such as labor, equipment, and materials to project tasks based on availability and requirements. Proper resource allocation ensures that the project is completed on time and within budget.

7. Risk Management: Risk management is the process of identifying, assessing, and mitigating risks that could impact the project's success. It involves developing strategies to minimize the impact of potential risks on the project.

8. Earned Value Management (EVM): EVM is a technique used to measure a project's performance and progress by comparing the planned value, earned value, and actual cost of work performed. It helps project managers track the project's performance against the baseline plan.

9. Quality Assurance (QA): QA is the process of ensuring that the project deliverables meet the specified quality standards. It involves establishing quality control measures, conducting inspections, and implementing corrective actions to improve quality.

10. Change Management: Change management is the process of managing changes to the project scope, schedule, and budget. It involves assessing the impact of changes, obtaining approvals, and updating project documentation to reflect the changes.

11. Stakeholder Management: Stakeholder management involves identifying, analyzing, and engaging stakeholders who have an interest in or are affected by the project. It aims to ensure that stakeholders' expectations are managed and their concerns are addressed throughout the project lifecycle.

12. Communication Management: Communication management involves planning, executing, and controlling project communications to ensure that the right information is delivered to the right stakeholders at the right time. Effective communication is essential for project success.

13. Procurement Management: Procurement management involves acquiring goods and services from external suppliers to meet project requirements. It includes defining procurement needs, soliciting bids, evaluating proposals, and awarding contracts.

14. Cost Control: Cost control is the process of monitoring and managing project costs to ensure that the project is completed within budget. It involves tracking expenses, identifying variances, and taking corrective actions to control costs.

15. Schedule Control: Schedule control is the process of monitoring and managing project schedules to ensure that tasks are completed on time. It involves tracking progress, identifying delays, and adjusting the schedule as needed to meet project deadlines.

16. Scope Management: Scope management involves defining, controlling, and managing the project scope to ensure that all deliverables are completed as planned. It includes defining project requirements, managing changes, and ensuring that project scope is well-defined.

17. Time Management: Time management involves planning, scheduling, and controlling project activities to ensure that tasks are completed on time. It includes setting deadlines, prioritizing tasks, and managing the project timeline effectively.

18. Cost Estimation: Cost estimation is the process of predicting the costs associated with completing a project. It involves analyzing project requirements, estimating resource costs, and developing a budget that aligns with the project scope.

19. Risk Assessment: Risk assessment is the process of identifying and evaluating potential risks that could impact the project. It involves analyzing risk likelihood, impact, and severity to determine the level of risk exposure.

20. Quality Control: Quality control is the process of monitoring and verifying that project deliverables meet specified quality standards. It involves conducting inspections, testing, and audits to ensure that quality

requirements are met.

21. Project Controls: Project controls are the processes, tools, and techniques used to manage project performance and ensure that project objectives are achieved. It involves establishing baselines, monitoring progress, and taking corrective actions to keep the project on track.

22. Change Order: A change order is a written document that modifies the scope, schedule, or budget of a project. It is used to formalize changes that occur during the project and ensure that all parties agree to the modifications.

23. Variance Analysis: Variance analysis is the process of comparing planned performance to actual performance to identify differences or variances. It helps project managers understand deviations from the baseline plan and take corrective actions.

24. Project Baseline: A project baseline is a snapshot of the project scope, schedule, and budget at a specific point in time. It serves as a reference point for measuring project performance and tracking changes throughout the project lifecycle.

25. Milestone: A milestone is a significant event or achievement in a project that marks progress or completion of a phase. It is used to track project timeline, communicate progress, and celebrate key project milestones.

26. Resource Leveling: Resource leveling is the process of smoothing out resource utilization over time to avoid peaks and valleys in resource demand. It helps optimize resource allocation and prevent resource shortages or overloads.

27. Contingency Plan: A contingency plan is a proactive strategy developed to address potential risks or unforeseen events that could impact the project. It includes identifying risks, developing response plans, and implementing risk mitigation strategies.

28. Lessons Learned: Lessons learned are insights and experiences gained from completing a project that can be applied to future projects. It involves documenting successes, failures, and best practices to improve project management processes.

29. Stakeholder Analysis: Stakeholder analysis is the process of identifying and assessing stakeholders' interests, influence, and expectations related to the project. It helps project managers understand stakeholders' needs and develop effective communication strategies.

30. Procurement Strategy: Procurement strategy is a plan developed to acquire goods and services needed for the project. It involves selecting the best procurement methods, negotiating contracts, and managing supplier relationships to ensure project success.

31. Performance Measurement: Performance measurement involves evaluating project performance against key performance indicators (KPIs) to assess progress and identify areas for improvement. It helps project managers track project success and make informed decisions.

32. Benchmarking: Benchmarking is the process of comparing project performance metrics and practices against industry standards or best practices. It helps identify areas where the project can improve and implement strategies to achieve better results.

33. Communication Plan: A communication plan is a document that outlines how project information will be communicated to stakeholders throughout the project. It includes communication objectives, channels, frequency, and responsibilities for each stakeholder.

34. Risk Mitigation: Risk mitigation is the process of reducing the likelihood or impact of identified risks on the project. It involves developing risk response strategies, implementing risk controls, and monitoring risks to minimize their effect.

35. Decision Making: Decision making is the process of selecting the best course of action from available alternatives to achieve project objectives. It involves analyzing information, evaluating options, and making informed decisions to move the project forward.

36. Conflict Resolution: Conflict resolution is the process of addressing and resolving conflicts that arise among project team members or stakeholders. It involves identifying the source of conflict, facilitating communication, and finding solutions to restore collaboration.

37. Resource Constraints: Resource constraints refer to limitations on the availability of resources such as time, budget, and manpower that may impact project execution. It is important to manage resource constraints effectively to avoid delays or cost overruns.

38. Performance Metrics: Performance metrics are quantifiable measures used to evaluate project performance against objectives. They help project managers track progress, identify trends, and make data-driven decisions to improve project outcomes.

39. Project Portfolio Management: Project portfolio management is the process of selecting, prioritizing, and managing a portfolio of projects to achieve strategic goals. It involves aligning projects with organizational objectives, optimizing resource allocation, and monitoring project performance.

40. Lessons Learned Report: A lessons learned report is a document that captures insights, experiences, and recommendations from completing a project. It is used to document successes and failures, identify areas for improvement, and share knowledge with future project teams.

41. Agile Project Management: Agile project management is an iterative approach that focuses on delivering value to customers through continuous collaboration, flexibility, and adaptability. It involves breaking down work into small, manageable tasks and responding to change quickly.

42. Lean Construction: Lean construction is a philosophy that aims to maximize project value and minimize waste through efficient processes, continuous improvement, and collaboration. It involves eliminating non-value-added activities, optimizing workflows, and reducing project lead times.

43. Total Quality Management (TQM): TQM is a management approach that focuses on delivering quality products and services by involving all employees in continuous improvement efforts. It includes customer

focus, process improvement, and data-driven decision-making to achieve excellence.

44. Value Engineering: Value engineering is a systematic approach to improving project value by analyzing functions and reducing costs without sacrificing quality. It involves identifying cost-saving opportunities, optimizing resources, and maximizing project efficiency.

45. Risk Register: A risk register is a document that captures and tracks identified risks, their likelihood, impact, and response plans. It is used to monitor risks throughout the project and ensure that appropriate actions are taken to mitigate risks.

46. Stakeholder Engagement: Stakeholder engagement is the process of involving stakeholders in project activities, decisions, and communication to ensure their needs are met. It involves building relationships, addressing concerns, and soliciting feedback to enhance stakeholder satisfaction.

47. Procurement Plan: A procurement plan is a document that outlines how goods and services will be acquired for the project. It includes procurement needs, sourcing strategies, evaluation criteria, and contract terms to ensure timely and cost-effective procurement.

48. Performance Reporting: Performance reporting involves communicating project progress, status, and key metrics to stakeholders. It includes generating reports, dashboards, and presentations to provide visibility into project performance and facilitate decision-making.

49. Risk Response Planning: Risk response planning is the process of developing strategies to address identified risks and their potential impacts on the project. It involves determining risk responses, assigning responsibilities, and implementing risk mitigation measures to minimize risk exposure.

50. Lessons Learned Workshop: A lessons learned workshop is a facilitated session where project team members reflect on project experiences, identify lessons learned, and develop recommendations for future projects. It promotes knowledge sharing, continuous improvement, and best practices.

51. Change Control Board (CCB): A Change Control Board is a group responsible for reviewing, evaluating, and approving changes to the project scope, schedule, or budget. It ensures that changes are assessed, documented, and implemented in a controlled manner.

52. Resource Histogram: A resource histogram is a visual representation of resource utilization over time. It helps project managers identify resource constraints, allocate resources effectively, and optimize resource scheduling to meet project requirements.

53. Cost Benefit Analysis: Cost benefit analysis is a technique used to evaluate the financial impact of project alternatives and determine the best course of action. It involves comparing costs and benefits to assess the feasibility and profitability of project investments.

54. Risk Assessment Matrix: A risk assessment matrix is a tool used to prioritize risks based on their likelihood and impact on the project. It helps project managers focus on high-priority risks and develop risk response strategies to mitigate their effects.

55. Stakeholder Mapping: Stakeholder mapping is the process of identifying and categorizing stakeholders based on their level of interest and influence in the project. It helps project managers understand stakeholder relationships, manage expectations, and engage stakeholders effectively.

56. Procurement Strategy Meeting: A procurement strategy meeting is a session where project team members discuss procurement needs, sourcing options, and supplier selection criteria. It helps align procurement activities with project goals, budget constraints, and quality requirements.

57. Performance Dashboard: A performance dashboard is a visual tool that displays key project metrics, KPIs, and performance indicators in real-time. It provides project stakeholders with a snapshot of project performance, trends, and areas for improvement.

58. Risk Mitigation Plan: A risk mitigation plan is a document that outlines strategies, actions, and responsibilities for reducing or eliminating identified risks on the project. It helps project managers proactively address risks and minimize their impact on project outcomes.

59. Decision Making Framework: A decision-making framework is a structured approach used to analyze options, evaluate alternatives, and make informed decisions. It involves defining decision criteria, gathering information, and weighing trade-offs to select the best course of action.

60. Conflict Resolution Process: Conflict resolution process is a series of steps taken to address and resolve conflicts among project team members or stakeholders. It involves listening to all parties, identifying common goals, and finding mutually acceptable solutions to conflict issues.

61. Resource Constraints Analysis: Resource constraints analysis is the process of evaluating resource availability, utilization, and limitations that may impact project performance. It helps project managers identify resource bottlenecks, allocate resources effectively, and optimize project schedules.

62. Performance Metrics Dashboard: A performance metrics dashboard is a visual tool that displays project performance data, trends, and comparisons in a user-friendly format. It helps project managers monitor progress, track key metrics, and make data-driven decisions to improve project outcomes.

63. Project Portfolio Management Strategy: A project portfolio management strategy is a plan developed to align project portfolios with organizational goals, priorities, and resource allocations. It involves selecting, prioritizing, and managing a portfolio of projects that deliver maximum value and achieve strategic objectives.

64. Lessons Learned Workshop Facilitation: Lessons learned workshop facilitation is the process of leading and guiding project team members in a structured session to reflect on project experiences, share insights, and develop recommendations. It helps capture knowledge, promote collaboration, and improve project management processes.

65. Agile Project Management Principles: Agile project management principles are a set of values and practices that emphasize customer collaboration, flexibility, and adaptability in project delivery. They include customer satisfaction, continuous improvement, teamwork, and responding to change quickly to deliver

value.

66. Lean Construction Techniques: Lean construction techniques are methods and practices used to streamline project workflows, eliminate waste, and maximize project value. They include pull planning, just-in-time delivery, and continuous improvement to optimize processes and reduce project lead times.

67. Total Quality Management Tools: Total quality management tools are techniques and methodologies used to improve product and service quality, customer satisfaction, and organizational performance. They include process mapping, root cause analysis, and statistical process control to identify and address quality issues.

68. Value Engineering Strategies: Value engineering strategies are approaches used to analyze project functions, reduce costs, and optimize resources without compromising quality. They involve brainstorming, cost-benefit analysis, and value analysis to identify cost-saving opportunities and improve project efficiency.

69. Risk Register Update: Risk register update is the process of reviewing, revising, and updating the risk register with new risks, assessments, and response plans. It helps project managers track changes in risk exposure, monitor risk trends, and ensure that risks are managed effectively throughout the project.

70. Stakeholder Engagement Plan: A stakeholder engagement plan is a document that outlines how stakeholders will be involved, informed, and consulted throughout the project lifecycle. It includes stakeholder analysis, communication strategies, and engagement activities to build positive relationships and manage stakeholder expectations.

71. Procurement Strategy Review: A procurement strategy review is a formal evaluation of procurement needs, processes, and outcomes to ensure that project objectives are met. It involves assessing supplier performance, contract compliance, and procurement effectiveness to optimize procurement activities and achieve project success.

72. Performance Reporting Framework: A performance reporting framework is a structured approach used to define, collect, and analyze project performance data and metrics. It involves setting performance goals, establishing reporting requirements, and generating reports to communicate project progress, trends, and key findings to stakeholders.

73. Risk Response Planning Meeting: A risk response planning meeting is a session where project team members discuss identified risks, develop response strategies, and assign responsibilities for risk mitigation. It helps project managers proactively address risks, minimize their impact, and ensure project success.

74. Lessons Learned Documentation: Lessons learned documentation is the process of capturing, organizing, and storing project experiences, insights, and recommendations for future reference. It involves creating reports, case studies, and knowledge repositories to share best practices, avoid pitfalls, and improve project management processes.

75. Change Control Board Meeting: A Change Control Board meeting is a formal gathering of project stakeholders to review, evaluate, and approve changes to the project scope, schedule, or budget. It ensures

that changes are assessed, documented, and implemented in a controlled manner to minimize project risks and impacts.

76. Resource Histogram Analysis: Resource histogram analysis is the process of reviewing resource utilization patterns, identifying resource constraints, and optimizing resource allocation to meet project requirements. It helps project managers balance resource demand, prevent shortages, and optimize project schedules for efficient project execution.

77. Cost Benefit Analysis Report: A cost benefit analysis report is a document that presents the financial impact, benefits, and risks of project alternatives to facilitate decision-making. It includes cost estimates, benefit projections, and risk assessments to help project stakeholders evaluate options and select the best course of action.

78. Risk Assessment Matrix Review: A risk