



**SUCCESSION
TRAINING**

BSB51415 Diploma of Project Management



Constraint Management

Version 1.11 Produced 18 October 2018

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Version control & document history

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ASSESSMENT WORKBOOK COVERSHEET

WORKBOOK:	Workbook 2
TITLE:	Constraint Management
FIRST AND SURNAME:	Zac Markwell
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Please read the Candidate Declaration below and if you agree to the terms of the declaration sign and date in the space provided.

By submitting this work, I declare that:

- I have been advised of the assessment requirements, have been made aware of my rights and responsibilities as an assessment candidate, and choose to be assessed at this time.
- I am aware that there is a limit to the number of submissions that I can make for each assessment and I am submitting all documents required to complete this Assessment Workbook.
- I have organised and named the files I am submitting according to the instructions provided and I am aware that my assessor will not assess work that cannot be clearly identified and may request the work be resubmitted according to the correct process.
- This work is my own and contains no material written by another person except where due reference is made. I am aware that a false declaration may lead to the withdrawal of a qualification or statement of attainment.
- I am aware that there is a policy of checking the validity of qualifications that I submit as evidence as well as the qualifications/evidence of parties who verify my performance or observable skills. I give my consent to contact these parties for verification purposes.

Name : Zac Markwell

Signature: 

Date: 4/5/2020

WRITTEN QUESTIONS

Part 1 – Project Scope

1. Which of the following are project initiation documentation required at the start of the project?

Select all that apply.

	a. Communications log
x	b. Project plan
	c. Work Breakdown Structure (WBS)
	d. Gantt Chart
x	e. Project charter
	f. Risk management

2. Which of the following are components of a project scope-management plan?

Select all that apply.

x	a. Project deliverables
	b. Project staff assignments
	c. Change request
x	d. Project justification
x	e. Product description
	f. Performance reports
x	g. Project objectives
	h. Project funding requirements
	i. Quality metrics
	j. Budget forecasts

4. Which of the following are events or problem areas relating to project scope that could trigger the need for a formal change request?

Select all that apply.

x	a. The deliverables may not meet quality requirements.
	b. Grammatical and typo errors are found in the project initiation documents.
x	c. The deliverables may not be what the client wanted, even though they were covered in the project plan.
x	d. The stakeholder considers the change request and advises the project manager.
	e. Observance of non-working holidays affecting project time.
x	f. Additional quality requirements (such as new legislation or changes in standards) will render the deliverables non-compliant.
x	g. Failure of equipment needed to produce the deliverables.
	h. Missing documentations in the project's information system.
x	i. Raw materials are no longer available.
x	j. Supplier or contractor closing business.

6. The following are methods of measuring work outcomes and progress against plans. Match each method to its correct description.

Write the letters that correspond to your answers in the spaces provided.

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	Method	Description
C	Units completed	a. Also known as the ‘steps’ method, this is used for projects that involve subtasks that need to be completed in an orderly fashion.
A	Incremental milestones	b. In this method, tasks that are being calculated tend to occur over a longer duration time and include multiple subtasks, where subtasks can have different units of measurements.
D	Start / finish	c. This method is used when project tasks are done repeatedly. Assuming that each task is completed at the same amount of time, resources and effort, each task is counted and totaled.
B	Weighted or equivalent units	d. This method is used to determine the percentage of the work completed and the percentage of the work that is still yet to be completed.

7. Which of the following are activities involved in decomposition of the total work project?

Select all that apply.

	a. Summarise project tasks in the form of a written report.
x	b. Identify and analyse the deliverables and related work.
x	c. Structure and organise the work breakdown structure (WBS).
	d. Arrange the smallest project tasks to form an aggregate representation of the total project task
x	e. Decompose the upper work breakdown structure (WBS) levels into lower level detailed components.
	f. Calculate duration and resource effort for each project task.
x	g. Develop and assign identification codes to the WBS components.
	h. Inspect whether work and deliverables meet requirements and product acceptance criteria.
	i. List resources required for each project task.
x	j. Verify that the degree of decomposition of the work is necessary and sufficient.

8. List three (3) ways in which the Work Breakdown Structure (WBS) can be created.

- Product deliverables
- major deliverables
- Subprojects

9. The following are some problem areas in scope management. In your own words, briefly discuss each problem area.

Do not exceed 100 words for each discussion.

Problem areas	Discussion
Scope creep	When the project scope slowly changes over the duration of the project, changing the project path.
Sponsor / project owner approval	The client or the owner of the project changes their opinion or choices for the final result
Project team accountability	Divided responsibility of the project accountably leads to a miss understanding of who is accountable for what, when there is too many members or lack of communication of roles.

10. In your own words, discuss the significance of scope management.

Do not exceed 150 words.

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Do not exceed 150 words.

It is a management plan set with a more detail and accuracy for the specific project. Describing in more details the deliverables required and dividing them up into more manageable section, covering specific costs and quality for the project.

The itemised scope management plan helps with human resourcing, procurement payments and material ordering.

It allows the project team to split responsibility between member and guarantee that all project milestones are met and delivered to a suitable standard.

Once completed its then forward to project manager, allowing a clearer view of the project and assisting in the development of the total project plan.

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11. The *PMBOK Guide* outlines the following processes in project scope management. List one (1) tool or technique used in each process.

Project Scope Management	Tool or technique
Collect requirements	client interviews, project specific meeting.
Define scope	experienced judgement and alternative identification.
Create WBS	project phase and task breakdown
Verify scope	insertion test procedure
Control scope	cost, revenue and implantation auditing.

Part 2 – Project Time

1. The following are estimation tools and techniques used in determining duration. Match each tool and technique to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Estimation tools and techniques	Description
B	Analogous estimating	a. This technique uses a statistical relationship between historical data and other variables to calculate an estimate for activity duration.
A	Parametric estimating	b. This uses parameters such as duration, budget size, weight, and complexity, from a previous, similar project, as the basis for estimating the same parameter to measure for a future project. This technique relies on the actual duration of previous, similar projects as the basis for estimating the duration of the current project.
E	Three-point estimating	c. This is guided by historical information. It provides duration estimate information or recommended maximum activity durations from prior similar projects. This can also be used to determine whether to combine methods of estimating and how to reconcile differences between them.
C	Expert judgement estimating	d. Contingencies are accounted for into the overall project schedule to account for schedule uncertainties.
D	Reserve analysis	e. This technique uses a mathematical formula to determine a weighted average of estimates. It uses the formula: $Te = \frac{To + 4 \times Tm + Tp}{6}$.

2. The following are estimation tools techniques used in determining activity resource. Match each to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Estimation tools and techniques	Description
D	Expert judgment	a. Several companies or organisations routinely distribute updated production rates and unit costs of resources for an extensive array of labour trades, material, and equipment for different countries and geographical locations within countries.
E	Alternative analysis	b. In this technique, when an activity cannot be estimated with a reasonable degree of confidence, the work within the activity is decomposed into more detail. The resource needs are estimated. These estimates are then aggregated into a total quantity for each of the activity's resources.
A	Published estimating data	c. This tool has the capability to help plan, organise, and manage resource pools and develop resource estimates.
B	Bottom-Up estimating	d. This technique is often required to assess the resource-related inputs to this process. Any group or person specialised with knowledge in resource planning and estimating can provide such expertise.
C	Project management software	e. These include using various levels of resource capability or skills, different, size or type of machines, different tools (hand versus automated), and make-or-buy regarding the resource.

4. Which of the following statements accurately explain the process of developing the project schedule, including the schedule baseline?

Select all that apply.

X	a. Developing the schedule is the process of analysing activity sequences, durations, resource, requirements, and schedule constraints to create the project schedule.
x	b. The project schedule and schedule baseline are developed or established using the activity lists, activity attributes, project scope statement as the bases.
x	c. Entering the activities, durations, and resources into the scheduling tool generates the schedule baseline.
	d. Tools and techniques used in developing the project schedule and schedule baseline include decomposition of the total project work.
	e. Developing the schedule baseline starts and ends in the planning phase of the project.

8. The following are tools and techniques used in project scheduling. Match each tool and technique to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Project scheduling tools and techniques	Description
B	Schedule network analysis	a. This is the process of looking at all of the activities that must be completed, and calculating the 'best line' – or critical path – to take so that you'll complete the project in the minimum amount of time. The method calculates the earliest and latest possible start and finish times for project activities, and it estimates the dependencies among them to create a schedule of critical activities and dates.
A	Critical Path Analysis	b. This is a graphic representation of the project's activities, the time it takes to complete them, and the sequence in which they must be done. Project management software is typically used to create these analyses. Common formats for this include Gantt Charts and PERT Charts
D	Schedule compression	c. They expedite the scheduling process by generating start and finish dates based on the inputs of activities, network diagrams, resources, and activity durations.
C	Automated scheduling tools	d. This tool helps shorten the total duration of a project by decreasing the time allotted for certain activities. It's done so that you can meet time constraints, and still keep the original scope of the project.

1. The following are processes involved in project cost management including budgeting the cost of the project. In your own words, discuss each.
- Do not exceed fifty (50) words for each discussion.

Do not exceed fifty (50) words for each discussion.

Estimating costs	a approximated costs for a project generated from a general understanding of what is required.
Determine budget	<i>A more accurate form of generating cost by determining project timeline and deliverables judged off a baseline.</i>
Control cost	Process of monitoring actual cost during a project and updating a costing baseline.

2. The following are different tools and techniques used in cost management. Match each to its correct description.

Write the letters that correspond in the spaces provided.

	Strategy	Description
<i>B</i>	Analogous estimating	a. This is used to establish both the contingency reserves and the management reserves for the project with regards to cost.
<i>C</i>	Parametric estimating	b. This strategy uses the values of costings from a previous, similar project as the basis for estimating the same parameter or measure for a current project. This is used when the current project is similar to a previous one in terms of defined parameters.
<i>E</i>	Cost aggregation	c. This uses a statistical relationship between historical data and other variables to calculate and estimate for cost. This technique is used to produce higher levels of accuracy depending upon the sophistication and underlying data built into the model. Estimates made through this project can be applied to the whole project or to segments of a project.
<i>A</i>	Reserve analysis	d. These are used to develop mathematical models to predict total project costs.
<i>D</i>	Historical relationships	e. Cost estimates are combined by work packages in accordance with the Work Breakdown Structure. The work package cost estimates are then combined for the higher component levels of the WBS and ultimately for the entire project.
<i>G</i>	Earned value management	f. In this technique cost performance measurements are used to assess the magnitude of variation to the original cost baseline.

- a. Bigger than Big Corporation project management policy presents as broad approach to project management. The use of a template to implement strategies itemises project phases, allowing their client base to be a non specific industry. However in having this template approach it limits them to the knowledge of how certain industries are run and rely solely on project information.
- b. There itemised procedures followed by their layered project steering teams has the general basis of project management covered. However if project specific issues arise at the generic approach could lead to a non productive resolution.
- c. **Pre- initiate phase-** This is the phase when key components of the project arise, from what defines the project, what has to be delivered, milestone that need to be achieved, what size, implement a steering committee and produce a project plan.

Initiate phase- This is the confirmation of information provided in the pre-initiate phase. By collating all the information and presenting to the client and approving all documentation outlining budget size, project size and duration.

Plan- Using the information gathered put together a schedule timeline and budgeting plan. Accumulate relative documents and process to appropriate governing authority for approval, generate a communication hierarchy and a risk management plan.

Implement phase- Generate and document a plan of attack for the project.

Closure- Prepare project specific documentation for auditing on deliverables, budgeting and project timeline, generate communication with steak holders for project closure. Create a maintenance management plan for client if required.

Part 4 – Project Quality

1. In your own words, discuss each of the following key concepts in Quality Management.

Do not exceed 100 words for each discussion.

Key Concepts in Quality Management	Discussion
Customer satisfaction	Customer satisfaction is very important concept not only for the closure but through out projects. Customer satisfaction is something that keeps project flow, a satisfied customer leads to prompt responses and payment when required. Customers are the final end users of products and set the standard required for projects/products.
Prevention over inspection	A preventive measure implemented during a project to manage the final result, these are a contingency cost and is something that aims to ensure the final standard is met.
Continuous improvement	This is a ongoing process carried out continuously during project where issues are recognised and manage with prompt response. Aims to improve quality product and service. Often occurs after incidents/issues have happened and aims to stop and prevent repeatable mistakes

2. In your own words, discuss the difference between Quality Assurance and Quality Control.

Do not exceed 100 words.

Quality assurance is the developed process with the intention to meet a set quality for the final product.

Quality Control is the test procedure of the final product ensuring a standard is met

4. The following are quality assurance and control methods, techniques and tools. Match each to its correct description.

Write the letters that correspond to your answers in the spaces provided.

	Methods, tools, techniques	Description
<i>H</i>	Benchmarking standards	a. This is a distribution of dots comparing two variables. If the two variables are completely independent you would expect the dots to be evenly distributed randomly across the graph. If there is a strong relationship though, the graph will show a straight line or a mathematical curve going through it.
<i>G</i>	Brainstorming sessions	b. These are graphical representations showing a visual impression of the distribution of data. Usually it shows the frequency up the Y axis of the bar graph and the measuring variable along the X axis.
<i>D</i>	Control charts	c. It is a graph where the X axis is time dependent. This allows you to look for time-based cycles in processes.
<i>F</i>	Flowcharts	d. These are also known as Shewhart charts or process-behaviour charts. These charts are used to statistically measure the quality characteristics of a process are under control. This is based on a statistical analysis where a centre line is drawn for the mean of the output, then an upper control limit and a lower control limit is created either side of the centre line. The process is then measured over a period of time and the results plotted on the graph. Once the graph has been created, it can be analysed to test the stability of the process and also any cycles of errors.
<i>B</i>	Histograms	e. It is very similar to a histogram, but it includes a line over the graph indicating the cumulative distribution of the results.

CASE STUDY

Instructions to Student

These case studies are hypothetical situations which will not require you to have access to a workplace, although your past and present workplace experiences may help with the responses you provide. You will be expected to encounter similar situations to these in future as you work in a project team environment.

In the real world you are likely to encounter the situation where you enter a project, taking over from another project manager. The documentation that is handed over to you is not necessarily up to scratch, and there could be serious issues with the project. This assessment captures that real life scenario.

The case studies are the first part of dealing with “multiple complex projects” required in all the units of this subject. The other assessment covering this requirement is the practical assessment. When you have completed the case studies you will be able to commence the practical assessment which covers the generic skills needed to function as an effective project team member. This assessment on the other hand covers the application of the underpinning knowledge and background theory.

Introduction

You have been appointed as a project management consultant to the project team at Awesome Landscapes Pty Ltd. Specifically, you are required to provide independent advice on seeing their current project throughout its entire lifecycle.

You have already provided advice to Awesome Landscapes in the previous workbook.

Today is 24 July 20xx. The project will shortly progress into the implementation stage. You have now been provided with up-to-date project documentation below, including an updated Project Plan. The project steering committee have reviewed the Project Plan, but they wish to have you conduct an independent evaluation of the project prior to signing it off.

As part of your consultancy services, you will be assisting the team in addressing issues around project constraints by answering the questions that follow this scenario.

The documents you need to complete the succeeding tasks can be accessed through the following links:

[Project Charter version 2 \(.pdf\)](#)

[Project Plan version 2 \(.pdf\)](#)

[Project Gantt Chart version 2 \(.mpp\)](#)

[Project Gantt Chart version 2 \(.pdf\)](#)

[Project Network Diagram version 2 \(.pdf\)](#)

(username: cstclearner password: CstcPty@123)

Note: These documents were generated in year 2016. For the purpose of this assessment, refer to ‘2016’ as the current year and ‘2017’ as the succeeding year.

6	Soil preparation
7	Add boulders
5	Construct stone paving pathway
10	Purchase additional plants
4	Landscape over old access roads

These indirect costs of extra labour and materials not only affect the financial requirements of the project but also the project timeline. To accomodate these costs adjustment will need to be done to the schedule payments and invoices, and will need to be reflected in a adjustment to the projects procurements pavements.

14. If Sam was to visit the site on Thursday, 22 September, he will see that two (2) tasks are in progress, namely:

- a. Construction of retaining walls.
- b. Install and compact soil behind walls.

According to the procedure documents, these two activities cannot happen at the same time. The retaining wall has to be built first. Once construction is completed, the soil needs to be added behind. Why are these two tasks in progress on the same day?

The tasks have staggered start and finish dates. Some section of the previous tasks will be completed allowing the next task to start with out affecting the construction of the wall.

15. According to the Gantt Chart, if there is a delay in the completion of Task 57 'Construct stone paving walkway',

- a. Which tasks, if any, are immediately delayed?
- b. Will this delay push out the completion of the project? Why or why not?
- c. Discuss how this could affect the resourcing of the project.
- d. List one (1) risk that could arise from this issue.

a. Stage 3.3 - Erect Signage

b. This could have some affect on the stages preceding task 57 that could affect the project. The preceding stage 3.4 would be classed as a critical milestone of the project and would need to be completed in a timely manner that is reflected in the project timeline and would keep all managing parties satisfied of the project status if completed with out delay.

c. The delivery of materials for the upcoming tasks could overlap with storage and itemising of the products. Could lead to items being delayed on delivery or unnecessary exposure to the elements.

d. Some items may not get delivered, perish or get lost in transport due to the alteration to the delivery schedule.

16. What is the total budget for the project expenditure?

\$462 153.00

17. Sam is very concerned about the cash flow of the project.
 - a. What is the problem?
 - b. What would you suggest be done to rectify the cash flow issue?

b. What would you suggest be done to rectify the cash flow issue?

- a. Cash flow doesn't match to the cashflow baseline
- b. Ask for a contingency payment instalments to be put in place early in the project timeline to increase the baseline to match the cumulative expenses.

If you believe Awesome Landscapes should seek increase funding from Massive Eco-development Corporation, provide a strong argument for your case. If not, explain your reasoning.

Recommended Action(s)/Lessons Learned Regarding Management of the Project:			
1.			
2.			
3.			
Additional Audit Comments:			
1.			
2.			
3.			
Have you attached additional material(s)?		yes	n o
Name(s) of attachment(s):			
1.			
2.			
Audit Report Submitted To:	Date:		

20. Sam has provided you with the following audit from a previous project (landscaping the new Cascade Peak Shopping Centre). Evaluate the audit report below and answer the following questions:

- a. What was the cause of the unsatisfactory results?
- b. What action would you recommend to prevent the issue coming up again in this project?

- a. A communication break down therefore leading to a lack of supplied project information.
- b. The project manager should be pre planning upcoming project tasks and ensuring that the information given is project appropriate and forwarded to onsite representation prior to commencement of the task. This will allow the onsite team to access the information and clarify any issues before schedule tasks are delayed.

Quality Audit Template		
Project Name: <i>Cascade Peak Chalets Landscaping Project</i>		
Prepared by: <i>Sam Ng</i>		
Date: <i>17 August 2015</i>		
Project Manager: <i>Sam Ng, Awesome Landscapes</i>		
Project Phase: <i>Implementation</i>	Overall Project Status: <i>On schedule</i>	
Audit Date: <i>17 August 2011</i>	Audit Number: <i>26</i>	Audit Leader: <i>Sam Ng</i>
Audit Team: <i>Sam Ng, John Cowley, Ann Deak.</i>		
Goal(s) of This Specific Audit: <i>To evaluate the communication and reporting processes.</i>		
Audit of Management of Project:		
1. Are tasks being communicated to site supervisor in a reasonable amount of time?	Assessment: Satisfactory.	Comment:
2. Are tasks being communicated to site supervisor of sufficient detail?	Assessment: Not satisfactory.	Comment: Tasks only being communicated as per Gantt chart. Site supervisor having to seek clarification regularly on requirements of tasks.

3. Are tasks being communicated by the site supervisor to the team members and contractors done in a reasonable amount of time?	Assessment: Not satisfactory.	Comment: Timing of communication can be improved if there wasn't the need for clarification of the details of the tasks.				
4. Are tasks being communicated by the site supervisor to the team members and contractors of sufficient detail?	Assessment: Satisfactory.	Comment:				
Overall Assessment of Management of Project: Tasks being communicated to the supervisor do not have the level of detail required by the site supervisor. In particular detailed plans are not provided with the task briefs. Some delays in commencing tasks have been experienced as the site supervisor has awaited clarification from the project manager.						
Recommended Action(s)/Lessons Learned Regarding Management of the Project: 1. Project manager to prepare task briefs in enough time to add the required level of detail. 2. Task briefs are to be supplied with all relevant attachments such as detailed plans.						
Additional Audit Comments: 1. 2. 3.						
Have you attached additional material(s)?				☐ yes	☒ x	☐ n o
Audit Report Submitted To: Kim Nguyen				Date: 24/08/2015		

21. The quality plan is very weak on cost management. Write a Cost Management Plan (of 200 – 300 words) for managing the quality of the financial processes while the project is in progress.

Guidance: Your Cost Management Plan must cover the following quality objectives and criteria.

- Meeting with contractual requirements.
- Paying invoices on time.
- Ensure invoices are sent out in time.
- Ensuring financial reporting is done on time.
- Include a calendar of when payments are likely to be due.
- Comparison of actual cash flow against projected cash flow.

Appendix 1:

Date	Payment No.	Percentage	Pre- GST	Inc. GST
27th Jul 16	1	10%	\$55000	\$60500
29th Sep 16	2	50%	\$275000	\$302500
11th Jan 17	3	20%	\$110000	\$121000
15 Mar 17	4	20%	\$110000	\$121000
Total		100%	\$550000	\$605000

