

# Project Management for Engineers

GoSkills online course syllabus

Sunday, August 9, 2020

**Skill level**

Intermediate

**Lessons**

46

**Accredited by**

CPD

**Pre-requisites**

None

**Video duration**

3h 48m

**Estimated study time**

24h for all materials

**Instructor**

Ray Sheen

## Project Management Context

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1

### Triple Constraint

Understand the inter-relationship between the triple constraints on a project of scope, schedule, and resources.

2

### Circles of Project Management

Circles of project management are a framework for considering different project management aspects. Based upon project and organizational considerations, some aspects may be emphasized and others de-emphasized.

3

### Project Leader

Know the role and responsibilities of the project leader.

4

### Core Team

Most large projects are managed by a cross-functional core team. Core team members have a dual responsibility; they are responsible for the project achieving its goals and they are responsible to ensure that the project complies with their function's standards and best practices.

5

### Stakeholders

Know how to identify stakeholders and understand how they measure project success.

6

### Project Lifecycle

Understand the phases of a project lifecycle and know how to approach a predictive project versus an adaptive project.

7

### Project Management Methodology

A methodology or system of project management helps those in the organization involved with projects to know what to expect.

## Project Initiation

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# 8

## Project Boundaries

Learn how to quickly identify project boundaries using the W questions.

# 9

## In-Frame and Out-of-Frame

In-Frame/Out-of-Frame is a technique for clarifying project boundaries by listing the activities and deliverables that are in scope for the project as well as the activities that are not required as part of the project.

## Scope Planning

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# 10

## Primary Constraint

The approach taken when planning a project should be based upon the primary project constraint. Attributes of that constraint are planned first and then other aspects of the project are planned to support the primary constraint.

# 11

## Phases

Projects are often organized into phases. Phases provide structure and logic to the project and aid the project team and management to track progress.

# 12

## Progressive Elaboration

Progressive elaboration is the principle of steadily adding detail to the project plan as more information becomes available.

# 13

## Deliverables Deployment

Learn how to identify project tasks and activities using the deliverables deployment technique.

# 14

## Task Description

Task Descriptions are the statements of scope for each of the project activities. They are written in the format of "action – completion point."

# 15

## WBS Dictionary

The WBS Dictionary is a table or spreadsheet that is organized by project task and contains all project planning details.

## Schedule Planning

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# 16

## Milestone Schedule

Understand when and how to use a milestone schedule on a project. Learn how to create a milestone schedule.

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## Gantt Chart

Understand when and how to use a Gantt chart on a project. Learn how to create a Gantt chart.

# 18

## Task List Schedule

A Task List Schedule is a schedule format used to communicate tasks with dates to extended team members or those who do not have a major role in the project.

## 19 Kanban Schedule

A Kanban Schedule is a project scheduling tool for managing a batch of similar items that must be processed through the same project steps.

## 20 Network Diagram

A network diagram is a project scheduling technique that shows the relationship between tasks by depicting project activities as a flowchart.

# Resource Planning

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## 21 Project Budget

Understand what is normally shown in a project budget. Learn how to create a time-phased project budget.

## 22 Responsibility Matrix

The Responsibility Matrix is a project management tool for correlating project work assignments with project team members.

# Estimating

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## 23 Estimating Uncertainty

Project plans are built with an accumulation of estimates, each of which has a level of uncertainty associated with it. The level of uncertainty is a major contributor to the accuracy of the plan and the amount of project risk.

## 24 Estimating Techniques

The most commonly used techniques for creating project estimates are analogous estimates, bottom up estimates, three point estimates, and using a parametric model.

## 25 Effort - Duration - Money

Project estimates of effort, duration, and money are inter-related. Based upon the cost and availability of the resources involved, once you have one of the estimates you can derive the other two.

## 26 Time-Box Estimating

Time Boxes are an estimating technique that sets a finite time for a task or task group. The amount of scope that is completed is variable. Whatever scope is done when the time box ends is the amount of scope for that activity on the project.

# Project Risk

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## 27 Positive and Negative Risk

Understand the difference between positive and negative risk. Learn the major steps of project risk management.

## 28 Risk Identification

The practice of identifying positive and negative conditions that may occur within the project and impact project objectives.

## 29 Sensitivity Analysis

The Risk Sensitivity Analysis is a technique to assess the magnitude of impact from a risk.

## 30 Negative Risk Response

Negative Risk Response is determining what actions the project will take to address risk threats.

## 31 Positive Risk Response

Positive Risk Response is determining what actions the project will take to address risk opportunities.

## 32 Contingencies and Triggers

Contingencies are potential risk response actions that will only be implemented if some triggering event or condition has shown that the risk probability has gone from unlikely to likely.

# Project Execution

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## 33 Team Building

Learn the characteristics of a project core team and understand the stages of a team building lifecycle.

## 34 Communication Management

Understand the characteristics of the major categories of project communication. Know the communication constraints typically encountered on project.

## 35 Task Accountability

Task Accountability is the project management activity associated with ensuring successful completion of project activities.

## 36 Quality Control & Quality Assurance

Quality Control and Quality Assurance are processes used for managing the project. Quality Control determines if the overall project result meets the requirements and Quality Assurance determines if appropriate standards and procedures are used to do the work of the project.

## 37 Contractors and Vendors Execution

Contractors and vendors are often used to accomplish project tasks. The complexity, uniqueness, and uncertainty of the activity will determine the nature of the relationship between the project team and the contractor or vendor.

# Project Control

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## 38 Dashboards

Learn how to create and use a project dashboard to communicate project status with both management and your project team.

## 39 Management Reviews

Understand the purpose of a project management review and learn how to prepare for one.

- 40** **Technical Reviews**  
Project technical reviews are formal decision meetings between team members and a panel of subject matter experts.
- 41** **Scope Creep**  
Scope creep is the uncontrolled expansion to project scope without adjustments to time, cost, and resources.
- 42** **Issue Resolution**  
Issues are any request, complaint, or unexpected condition that leads to unplanned, but in scope, work that must be accomplished on a project. They normally result in the need to implement a workaround in order to resolve them.
- 43** **Project Change**  
A formal documented process for changing the project baseline.

## Project Closeout

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- 44** **Stakeholder Acceptance**  
Understand how to gain stakeholder acceptance during project closeout and learn how to create and use a Punch List.
- 45** **Transition to Business**  
To fully realize the benefit of a project, often business systems need to change to implement the project results. This transition can be a challenging aspect of the project.
- 46** **Lessons Learned**  
Lessons Learned are a retrospective look at a project, or phase of a project, to identify best practices to be repeated and performance gaps to be improved.

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