

# Core Concept: Project Management

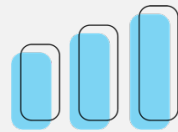
**Engineering Literacy Dimension:** Engineering Practices

**Practice:** Engineering Design

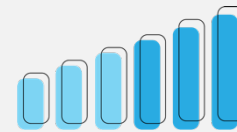
**Overview:** *Project Management* is the process of scoping a project and planning, organizing, and managing resources to complete the project within defined constraints. Sophistication in this process requires knowledge related to project management strategies, techniques, and tools for (a) *initiating and planning project activities*, (b) *scoping the project and managing timelines and costs*, (c) *tracking and evaluating risks, quality, teams, and procurement*, and (d) *managing product lifecycles*. This core concept is important to the practice of Engineering Design as design projects are carried out within dynamic environments involving a variety of limitations.

## Performance Goal for High School Learners

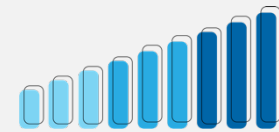
I can successfully plan and manage a design project to achieve the desired goals within the established constraints through the application of appropriate project management strategies and techniques (e.g. team charters, Gantt charts).



Basic



Proficient



Advanced

### INITIATING AND PLANNING

I can identify goals and considerations for a design project.

I can analyze and prioritize potential issues for a design project.

I can develop a project charter in consideration of internal and external contexts of a design project.

### SCOPE, TIME, AND COST MANAGEMENT

I can identify the constraints of project scope, time, and cost for a design project.

I can analyze the relationships of project scope, time, and cost in a certain situation in order to establish reasonable and achievable project phases, timelines, and budgets.

I can refine project phases, timelines, and budgets in order to successfully complete my design project within the defined constraints.

### RISK, QUALITY, TEAMS, AND PROCUREMENT

I can identify potential issues concerning risk, quality, teams, and procurement for a design project.

I can analyze and develop plans for issues concerning risk, quality, teams, and procurement throughout a design project.

I can track and respond to issues involving risk, quality, teams, and procurement during a design project.

### PRODUCT LIFE (e.g. PLM)

I can explain the generic lifecycle of products by identifying the phases involved in its design, manufacture, use, and disposal.

I can analyze the lifecycle (design conception, through manufacturing and use, to disposal) of a certain product in order to identify the factors that one should consider when designing the product, including how each consideration would impact the product and its connected environment.

I can develop a plan to produce a product that considers the entire lifecycle (from design conception, through manufacturing and use, to disposal) of the product itself.