

## Projects

Most engineers will work on many projects during their career.

What is a “project”?

- An activity that produces a product (drawings, reports, hardware, etc.) – it has “deliverables” (need to be DEFINED)
- Has a definite beginning and ending
- Is done once
- Has completion criteria

Has a beginning and ending – what is its Life Cycle?

### 1) Definition

- Why are we doing this?
- What are we trying to accomplish
- What are the deliverables?

Purpose of DEFINING:

- creates the rules
- clarifies expectations
- creates a foundation for the project

### 2) Planning

Identifies:

What tasks are required

What skills are required

What facilities and resources are required

What needs to be done (what will we do)

Who will do what tasks

When does each task need to be completed by (avoids procrastination)

Why plan?

- Increases awareness of risk (therefore risks can be managed)
- Responsibilities can be determined and communicated
- Identify necessary resources

### 3) Execution

Go do it!

Are we on schedule?

Do we need to change the definition or plan?

### 4) Close out

Write reports (maybe)

Deliver the product

Move on

## **Project Management**

Project success factors:

**CLEARLY UNDERSTOOD GOALS**

Communication within the team and to all stake holders (DEFINE)

Team motivation

Responsibility of tasks

Accountability

Control of scope (scope creep – DEFINE)

Failure Factors:

Conflict of goals

Poor communication

Not all members share in responsibilities

Three competing aspects: **COST QUALITY SCHEDULE**

Cost – how many dollars spent. Includes labor hours, equipment and tools, raw materials.

Schedule – how long it takes to complete specific tasks.

Quality – how well the product meets the established criteria.

You can usually shorten a schedule, but it may cost more (overtime, rush deliveries, etc.) or reduce the quality. You can usually decrease cost, but it will likely take longer or result in lower quality. You can increase quality, but it will cost you.

Communication tools to be discussed:

- Meetings
- Logs
- Schedules