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 (maybe not understood)
    Poor communication
    Not all members share in responsibilities

For those **new** to projects, there are 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 in 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 may cost you in terms of schedule or expense.

HOWEVER, corporations such as Toyota have demonstrated that : COST QUALITY SCHEDULE are NOT exclusive. Through continuous improvement, and implementing "lean processes, **you can achieve high quality, quickly and at lower cost**!!!!

Communication tools to be discussed:
- Meetings
- Logs
- Schedules