Project Scheduling

Estimation

- Cost and time estimation is very important
- Not too low :
  - difficult to meet objectives and expectations
- Not too High
  - Approval, takes longer, cost more
- Time : hours, rental, leased space
- Cost : materials, travel, team
- Use project team, experts

Estimation Methods

- Estimating Methods: You can choose from different methods of estimating depending on the type of project and your organization's experience. approaches used:
  - **Existing information** Existing information can provide more accurate estimates based similar work performed in the past
  - **Parametric models** These models use factors, such as square footage, and the time or cost per square foot, cost of network cable/meter
  - **Program Evaluation and Review Technique (PERT)** looks at best, worst, and most likely results. It comes in handy when there are too many unknowns to estimate tasks with certainty. You can create schedules based on three different durations for each task to show project

Estimation Techniques

- **The Delphi technique** uses the collective intelligence of a group of people
  - ask five or six experts to produce estimates independently
  - share the anonymous results with the group and
  - then ask each person to produce a second estimate.
  - Repeat this step one or more times to further refine the estimates.
  - Use the average of the last round of estimates as the final estimated value.

- Using MS Excel (Practical Session)

Estimation Techniques

- You can either use Top down or Bottom up
  - Top down (start with whole)-> summary tasks
  - Bottom up (start with small tasks) -> work packages

Creating tasks

- Sequence your tasks
- Task dependency if task controls an other tasks
  - Finish to start dependency (one after the other)When the predecessor task finishes, the successor task begins
  - start to start dependency (parallel) the start of one task triggers the start of the second.
  - Finish to finish one task continues only as long as another task is in progress.
  - Start to finish (linked) Confusing, and not common the start of the predecessor controls the finish of the successor.
- Examples!!!!

Identifying the Correct Dependency Type

- **What does this task need before it can start?**
- **Does the start or finish of the predecessor control the successor?**
- **Does the predecessor control the start or finish of the successor?**

Work, duration, and units

- Work: number of hours or days to complete a task
- Duration: the time between start and end
- Units: amount of work in a duration (percentage)

Milestones

- Progress in project key points it is like placing stones on the road as a mark
  - Starting and finish milestones you can say whether the project is a head or late.
  - To highlight progress
  - Delivery follow up
  - To flag decision (what happen next) or for approval
  - Common Types of Milestones
    - Decisions
    - Events
    - Starts
    - Deliveries
    - Progress

Realistic scheduling

- Assign people to tasks based on actual work hours
- Assign part-time workers based on availability
- Adjust hours based on individual ability
- (no multi-tasking)Assign workers to 3 tasks or less ------PRODUCTIVITY------

Other Issues

- Critical paths are Paths with long duration
- Critical paths
  - Has no slack (IDLE flow)
- Shortening
- Baseline