

A blue spiral-bound notebook with silver rings at the top. The text is centered on the page.

# How to Write a Proposal

# Audience

- non-equal peers (sponsor)
- equal peers (reviewers)

# Types of Proposals

- solicited
  - sponsor “asks” for proposals
  - competitive
  - fixed deadlines, content
- unsolicited
  - may be non-competitive
  - arbitrary deadlines, content
  - “whitepaper” precursor

# Solicited Proposals

- Request For Proposals (RFP)
- Sponsor-initiated
- Sponsor-specified
  - areas of interest
  - deadlines
  - cost (sometimes)
  - content (sections, page count, etc)

# Unsolicited Proposals

- Proposer-initiated
- Often “whitepaper” precursor
  - brief (few pages) technical description
  - no budget, but may include **Rough Order of Magnitude (ROM) cost estimate**
- If encouraged by sponsor, follow-up with full proposal

# Proposal Content

- Technical proposal
- Management proposal
- Cost proposal
- Statement Of Work (SOW)
- Timeline

# Technical Proposal

- Statement of problem addressed
- Technical approach
- Anticipated results

# Management Proposal

- Principal-Investigator (PI)
- co-PIs
- Describe how goals will be met
- If multiple groups (e.g. 2 or more universities), describe their relationship, and how tasks will be divided

# Cost Proposal

- “Line item” budget
  - Direct cost
    - labor, including benefits
    - materials, supplies
    - travel
  - Indirect cost
    - “overhead” (cost-of-doing-business)
    - typically, about 50% for public universities, 100+% for companies
- Budget justification
  - short text justification of major items

# Example Budget

(hypothetical)

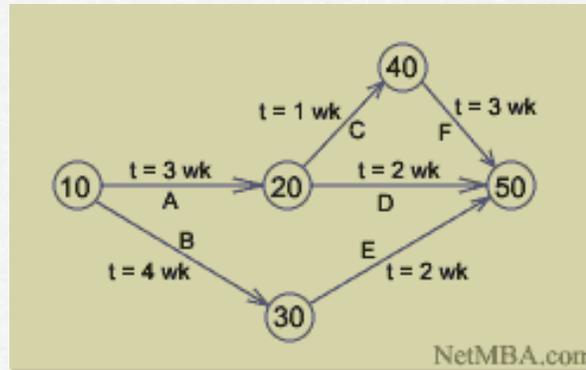
labor	professor (10% AY, 2 months summer)	\$20,000
	graduate research assistant (50% AY, 2 months summer)	\$24,000
benefits	faculty (20%) students (25%)	\$10,000
materials, supplies		\$3,000
travel	2 person-trips, Tucson-Washington DC	\$3,000
<b>Total Direct Cost</b>		<b>\$60,000</b>
<b>Indirect Cost</b>	50% direct cost	<b>\$30,000</b>
capital equipment	Sun workstation	\$10,000
<b>Total Cost</b>		<b>\$100,000</b>

# Statement Of Work (SOW)

- Specific tasks to be performed
- Specific “deliverables” (sometimes separate section)
  - hardware
  - software
  - reports
- Specific timeline

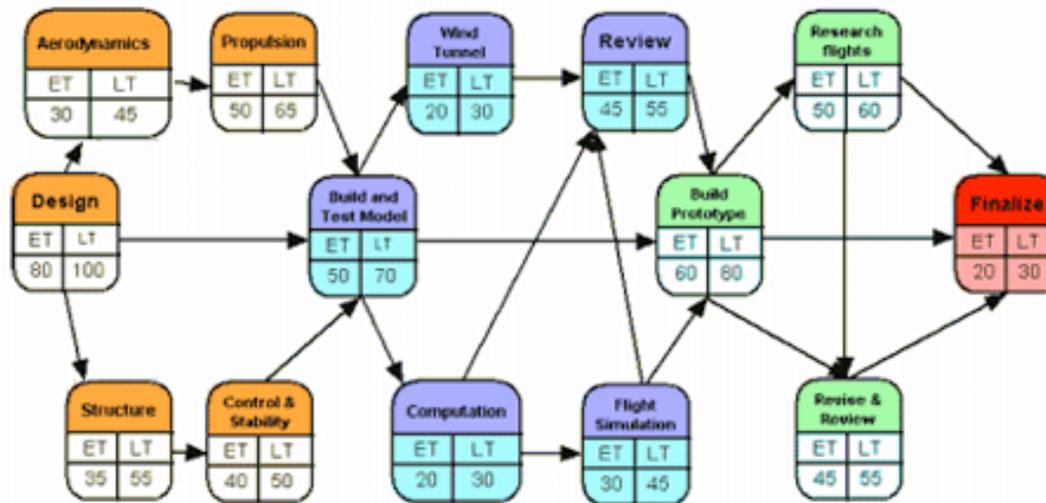
# Timeline

- ❑ Major and minor milestones
- ❑ Division of tasks
- ❑ Tools
- ❑ PERT chart (<http://www.netmba.com/operations/project/pert/>)



another example (<http://www.smartdraw.com/examples/pert/airplanedesign.htm>)

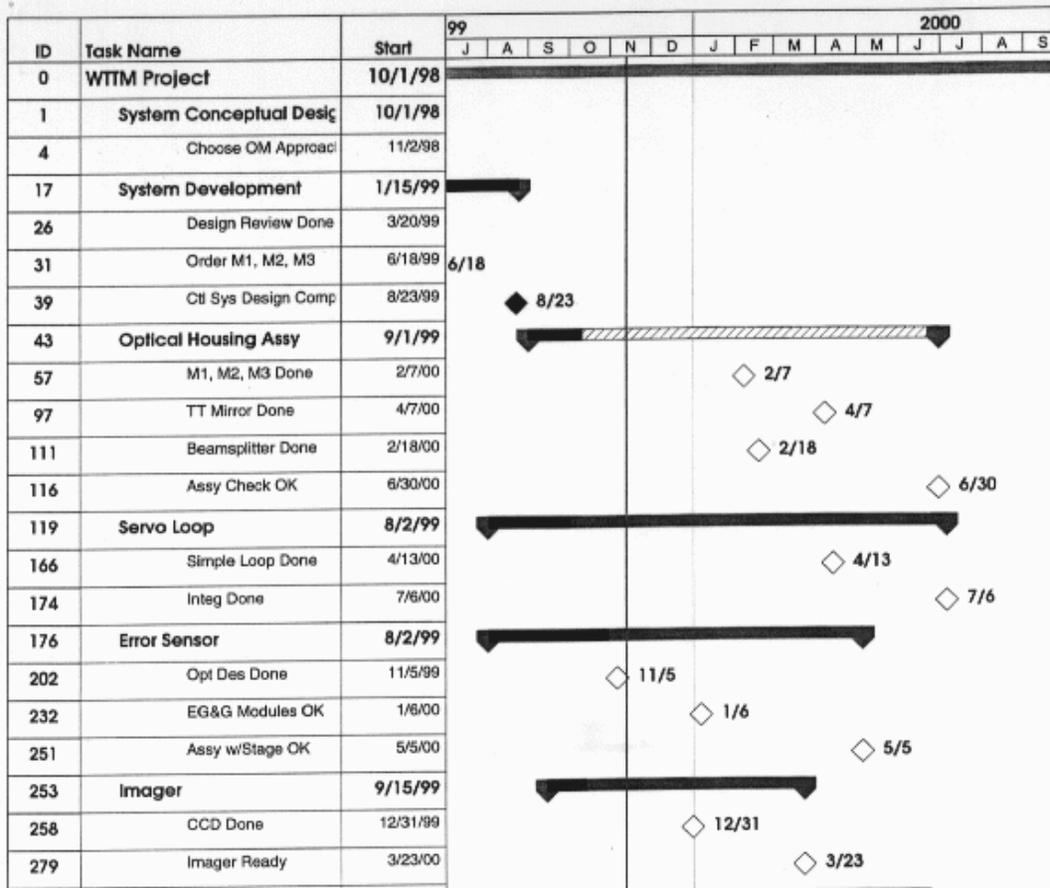
### AIRPLANE DESIGN PROCESS



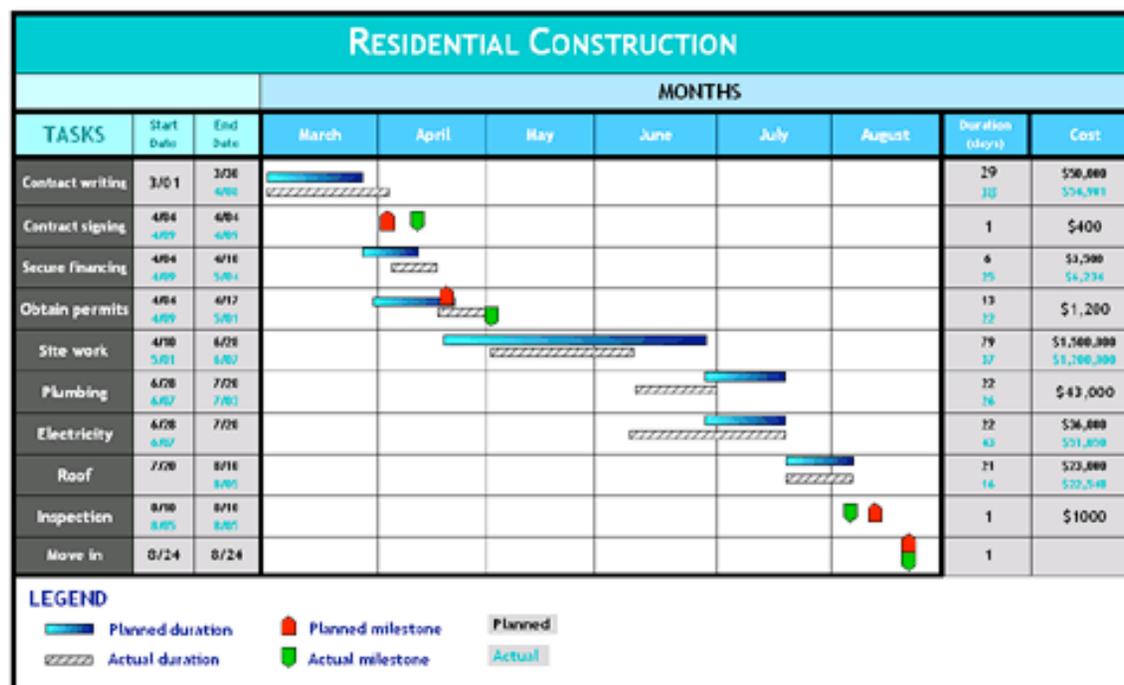
### PERT CHART

PERT charts are typically used for projects that involve numerous contractors, departments, and organizations where the duration times are hard to define and the relationships between tasks are complex. Each PERT chart starts with an initial point from which all tasks originate. Each subsequent task is connected to other tasks and is either coded or annotated with its name, the people assigned to it, and its best, worst, and average duration time. The chart is completed when all networked tasks come together to a completion point.

# □ GANTT chart [http://claret.kpno.noao.edu/wiyn/wttm\\_design/proj\\_sched.html](http://claret.kpno.noao.edu/wiyn/wttm_design/proj_sched.html)



another example (<http://www.smartdraw.com/examples/gantt/construction.htm>)



### GANTT CHART

Gantt charts can show the difference between the planned and actual duration of tasks to aid in the analysis of the project development process. Gantt charts can also show the cost associated with each task and the persons or departments responsible for each task.

# General Advice

- Proposals are
  - Selling document (program, project)
  - Commitment (cost, time)
- Be positive, but honest, about expectations
  - Reviewers often detect a proposal that promises too much for the resources requested
- If proposal is successful, be sure you can perform as promised