

***Final presentations in 6 weeks!***



***D-Lab: ENERGY***

Week 8: Presentations &  
the Design Process

# AGENDA

- Presentations
- Quick Design Process Review
- Brainstorming & Project Pugh Charting
- Follow-up Presentations

# DESIGN IS HARD...

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- Dynamics
- Details
- Time Pressures
- Economics

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# THE DESIGN PROCESS

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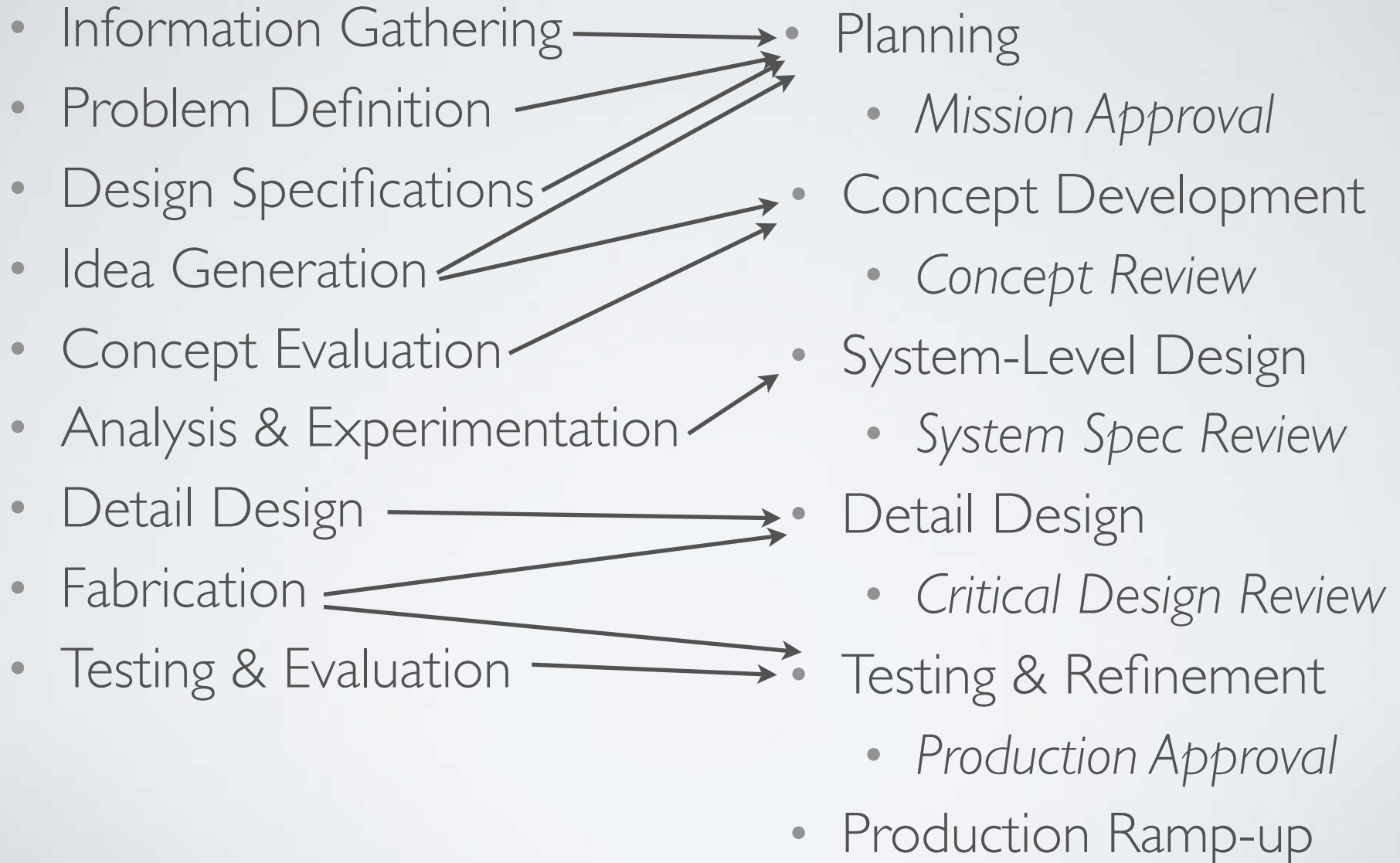
- Information Gathering
- Problem Definition
- Design Specifications
- Idea Generation
- Concept Evaluation
- Analysis & Experimentation
- Detail Design
- Fabrication
- Testing & Evaluation

# THE DESIGN PROCESS

- Planning
  - *Mission Approval*
- Concept Development
  - *Concept Review*
- System-Level Design
  - *System Spec Review*
- Detail Design
  - *Critical Design Review*
- Testing & Refinement
  - *Production Approval*
- Production Ramp-up



# THE DESIGN PROCESS



# PUGH CHART

Image removed due to copyright restrictions.

See <http://web.mit.edu/2.009/www/labs/lab2picture.jpg>

# GANTT CHART

Image removed due to copyright restrictions.

See [http://upload.wikimedia.org/wikipedia/en/7/73/Pert\\_example\\_gantt\\_chart.gif](http://upload.wikimedia.org/wikipedia/en/7/73/Pert_example_gantt_chart.gif)

# BEST PRACTICES

- timeline minder
  - are we hitting our dates? what can we do RIGHT NOW?
- goal minder
  - is what we're doing getting us closer to our goal?
- community partner liaison
- documentation (photos & wiki)
  
- fail fast
- prototype early
- identify your dealbreakers immediately (physical impossibilities)

# OUR DESIGN PROCESS

- Planning Everything until today
  - *Mission Approval* today-4/1

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- Concept Development 4/1-4/8
  - *Concept Review* 4/8 project spec. disc.

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- System-Level Design 4/9-4/15
  - *System Spec Review* 4/15 Design Review

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- Detail Design 4/16-4/22
  - *Critical Design Review* 4/22 Design Review

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- Testing & Refinement 4/22-5/6
  - *Production Approval* 5/7 Final Presentation

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- Production Ramp-up [plans in final report]

# REMAINING DELIVERABLES

Week	Wednesday	Friday	Assignments Due of Friday
Mar 30	Concept Generation: trip presentations, evaluate projects	Team Formation, Brainstorming	<b>Trip Report</b> ; select projects; team roles assigned (timeline minder, goal minder, community partner liaison, documentation)
Apr 6	<b>Exam 2</b> & librarian visit	Experimentation overview; Project work	Wiki Design Notebook Report (best brainstormed ideas, Pugh charts); project specifications due - on wiki & discussed in class
Apr 13	Project Work	Project Work	Wiki Design Notebook Report (sketch models & experimentation); sketch models & experiment due - on wiki & discussed in class
Apr 20	Project Work	<b>Design Review &amp; Build</b>	Wiki Design Notebook Report; initial working prototype shown at design review
Apr 27	Project Work	Project Work	Wiki Design Notebook Report
May 4	Project Work	Optional Prep	<b>Final Presentation/Review (on Saturday)</b>
May 7	<b>Final D-Lab Presentations, 12-3</b>		
May 11	Wrap-up & Documentation	No Lab (Classes over)	<b>Final project report &amp; team assessment (due on Wednesday)</b>

# NOW

- finalize problem definitions for D-Lab Energy-relevant projects
- compare using Pugh chart method
  - criteria??
- 2:30 - 1-minute pitches for each possible final project and 3 minutes on Pugh chart pros/cons

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