

ENGR 310

Lecture 6

1 Feb 2008



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Sit with your team.



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Expectations

Each person will:

- Attend class and recitation.
- Contribute substantively towards the team's goals.
- Put 6-8 hours of solid effort towards their project every week.
- Document their work.



Project

- Should have met in recitation this week.
- Should have a project topic identified.
 - Or be deciding between 2-3.
- Next: Scope and define the project

Assignment 2!



“The formulation of a problem is far more essential than its solution.”

- Albert Einstein

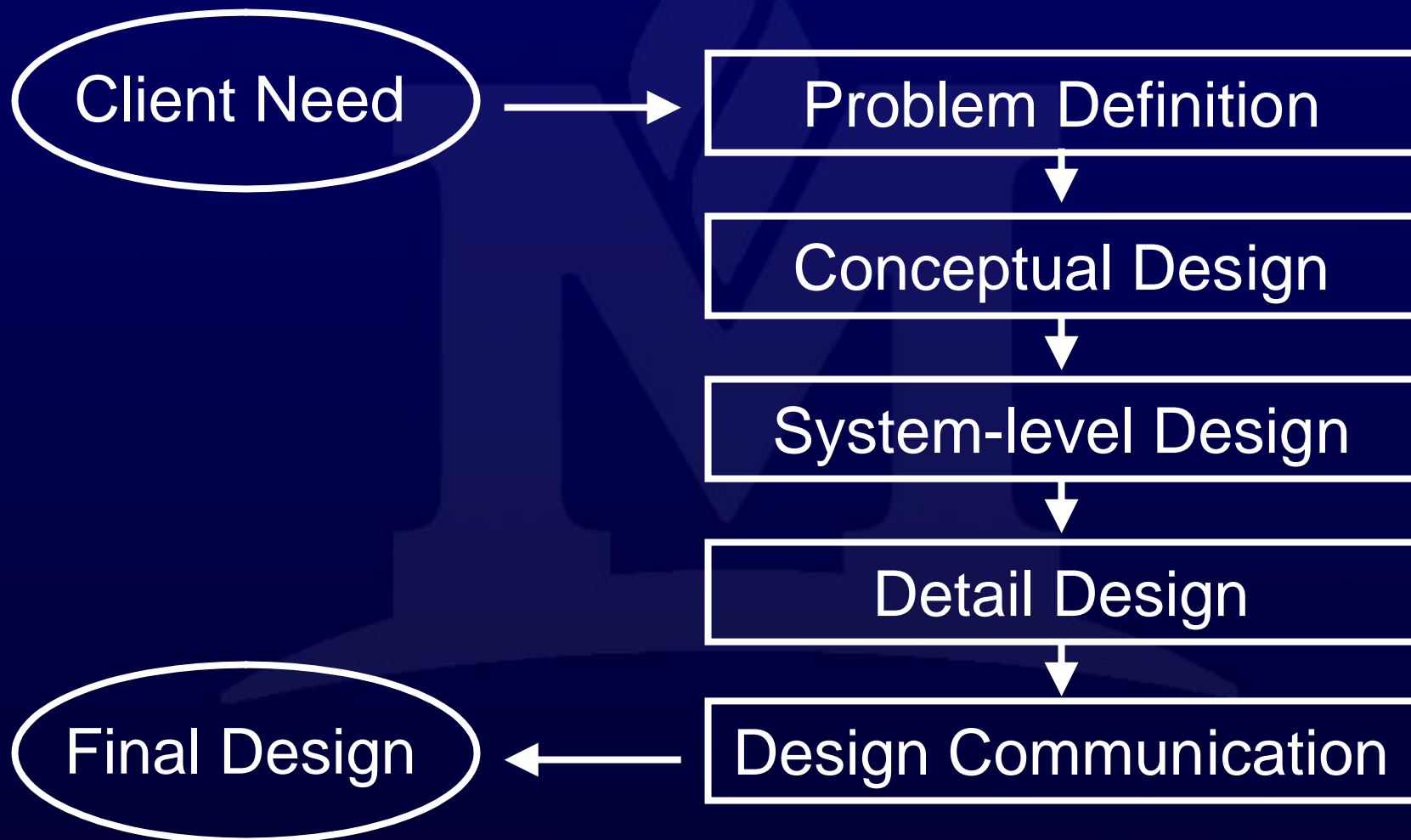


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An Engineering Design Process



Clarity on Direction

- Initial problem statement likely contains:
 - errors
 - biases
 - implied solutions

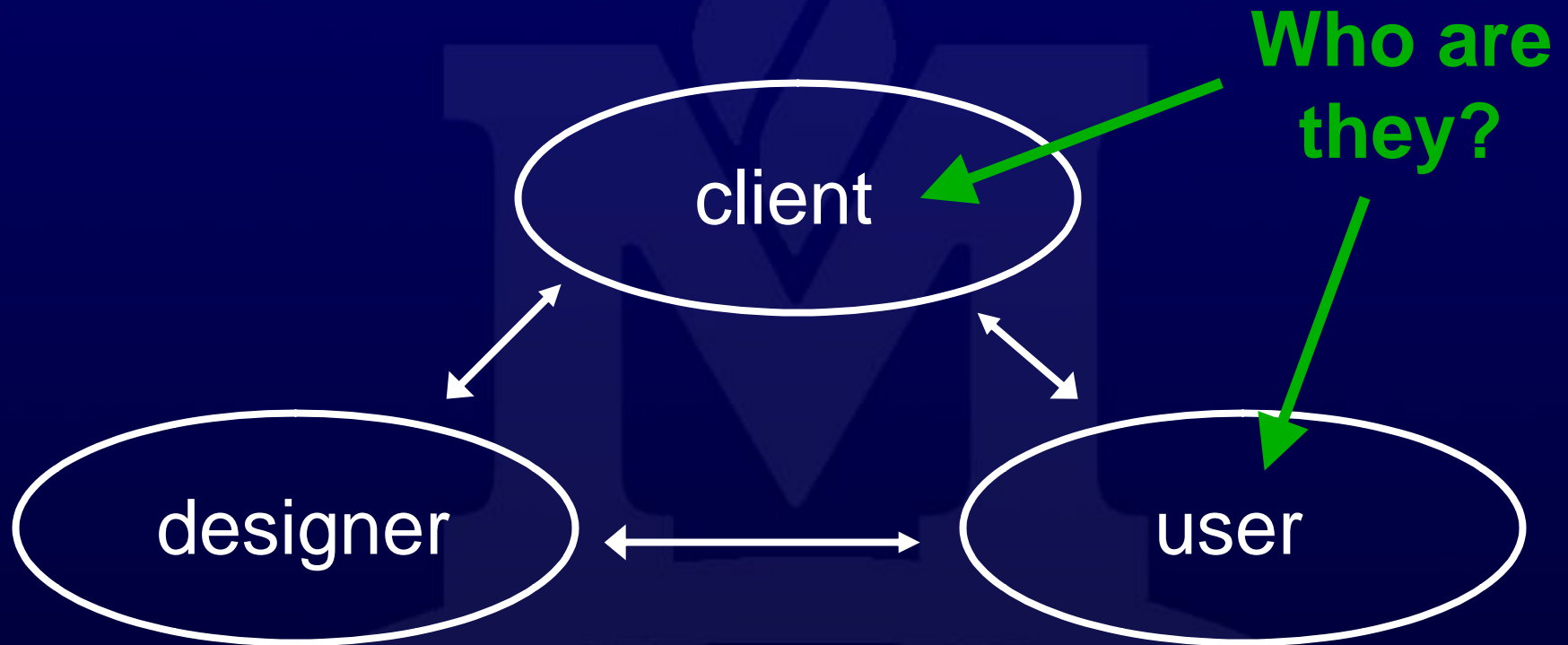


Clarity on Direction

- Initial problem statement likely contains:
 - errors
 - biases
 - implied solutions
- So we want to clarify:
 - what the client really wants
 - what potential users could really use
 - the context within which system will function



First step



Exercise

In your teams, list:

- Clients
- Potential users

for your selected project topic(s).



Exercise

In your teams, list:

- Clients
- Potential users

for your selected project topic(s).

Is there anyone else who will potentially affect, or be affected by, your project?



How do we find out what they need or want?

<http://www.youtube.com/watch?v=JZH70qhmEso>



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Key Tools

- Observation
- Interviews
- Research



Observation Tips

- View problem first-hand.
- Start with an open mind.
- Don't jump to conclusions.
- Take notes, pictures, video.

“You can see a lot just by looking.”

- Yogi Berra



Interviews

- Look beyond the obvious
- Ask for clarification if unclear
- Focus on the problem/need:
 - when, where problem occurs
 - how it occurs
 - why it's a problem
- Be skeptical of assertions of root causes
- Dig deeper!



Research

- Who else has tried to solve this problem, or one similar to it?
 - patents: www.uspto.gov
 - catalogs: Thomas register
 - experts
- Learn as much as you can about the problem!



Exercise

In your teams, develop plans to:

- Observe the problem in context.
- Interview clients, users, experts, others.
- Research the problem.

