ME4182 & ME4723 *(other disciplines welcome!)*

Common Studio Session for Week #2

Date 08/30/2021

Recap/Reminders

- ALL Links, SLIDES and VIDEOS are posted here: http://mecapstone.gatech.edu/students
- Visit http://mecapstone.gatech.edu/assignments to check your team assignments.
  - Teams will be introduced to their respective sponsor within next 24 hours.
- Plan for Wednesday's Lab
  - Await for email from your team's primary advisor. Plan to visit room on - campus between 12:30-3:15pm and discuss weekly lab deliverables

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Common Studio Topics

1. Course Overview, Projects, Teams and Bids, Communication
2. User needs / Engineering Design Specifications
3. Market research and Prior Art
4. Ideation, Concept Generation, Design Process
5. Industrial Design & Human Factors
6. Risk, Liability, Codes & Standards
7. Prototyping
8. Social, environmental, sustainability considerations
9. Analysis
10. Effective Communications / Plan for Expo
11. Intellectual Property Protection, Filing Patent Claims
12. Forming a company

Associated deliverables and reports may be due in your section lab meetings

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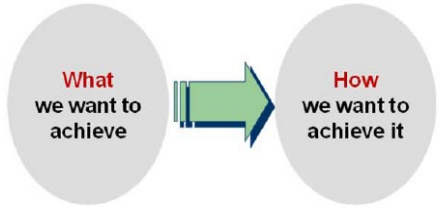
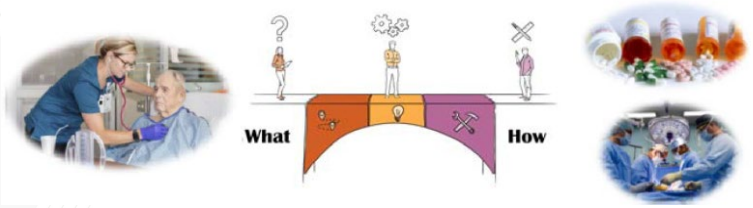
Thank You!

1. Customer Needs and Engineering Specifications



Essentially design is a *Mapping* between "*what* we want to achieve" and "*How* we want to achieve it"



Dr. Roger Jiao
Associate Professor
G.W.W. School of Mechanical Engineering

2. Prior Art Search, Market Research and Marketing

Mr. David Moeller,
CSO, Sectigo
GT BSME 2002

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User Needs, Design Specifications, etc.

- What is the design problem, motivation, and need?
- What is the intended use?
  - Who will use it?
  - Who cares, and why? (stakeholders)
  - What's the use environment?
- What are the desired functions, special features, points of interaction with other products/devices (e.g., hardware/software integration), etc?
- What is the value statement; the benefits to user(s) and other stakeholders?
- What will customers require?
- What human factors considerations apply?
- What are relevant constraints?

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Engineering Specifications Table

				Issued:		
			For:		Page:	
			Specification			
No.	Date	D/W	Requirements	Responsible	Source	How Validated
General						
Physical Characteristics						
Electrical						
Mechanical						
Performance						

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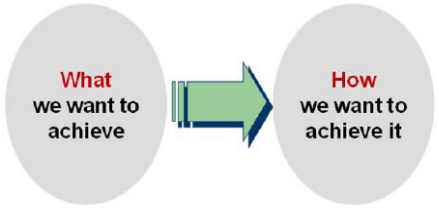
Thank You!

1. Customer Needs and Engineering Specifications



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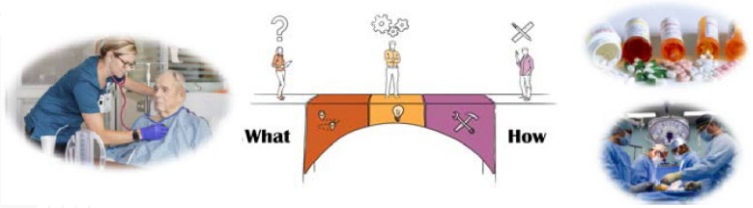

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Market Research and Prior Art

- How will you perform relevant market research, primary or secondary or both?
- Who will use it?
- Who cares, and why?
- What are the desired functions, special features, points of interaction with other products/devices (e.g., hardware/software integration), etc?
- What competitor designs/products are already on the market, have been on the market in the past, or have been disclosed through prior publications?
- What are the commercial applications of the technology?
- What are the applicable or relevant patents?
  - How do these patents and products relate to your problem?
  - How do these patents or product constrain or enable your solution?

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Flipped Class for Week #4

- Everyone review the slides and videos on “Ideation and Concept Generation” listed under week #4 on class schedule

- Need 4 teams to volunteer for a panel discussion on Ideation and concept generation. Each team will have…
  - 3 minutes to present their problem
  - 2 minutes to present a draft function tree or concept maps.
  - 5 minutes for Q/A and discussion by class

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