Georgia Tech

CREATING THE NEXT

ME4182 & ME4723 *(other disciplines welcome!)*

Common Studio Session for Week #3

Date 09/22/2021

http://popin.it/xg6nim

popin.it/xg6nim

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's reimbursement amounts
  - Reimbursement guidelines: https://mecapstone.gatech.edu/resources/reimbursement-guidelines/

- Expert support staff help available:
  - Kinsey Herrin, Sr. Research Scientist with interests in prosthetics, biomed device projects.
  - Mondays 3-4 pm in GTMI #401 or https://bluejeans.com/489459898/2989
  - Students are also welcome to email Kinsey.herrin@me.gatech.edu directly to schedule an appointment

Georgia Tech
CREATING THE NEXT

Common Studio Topics

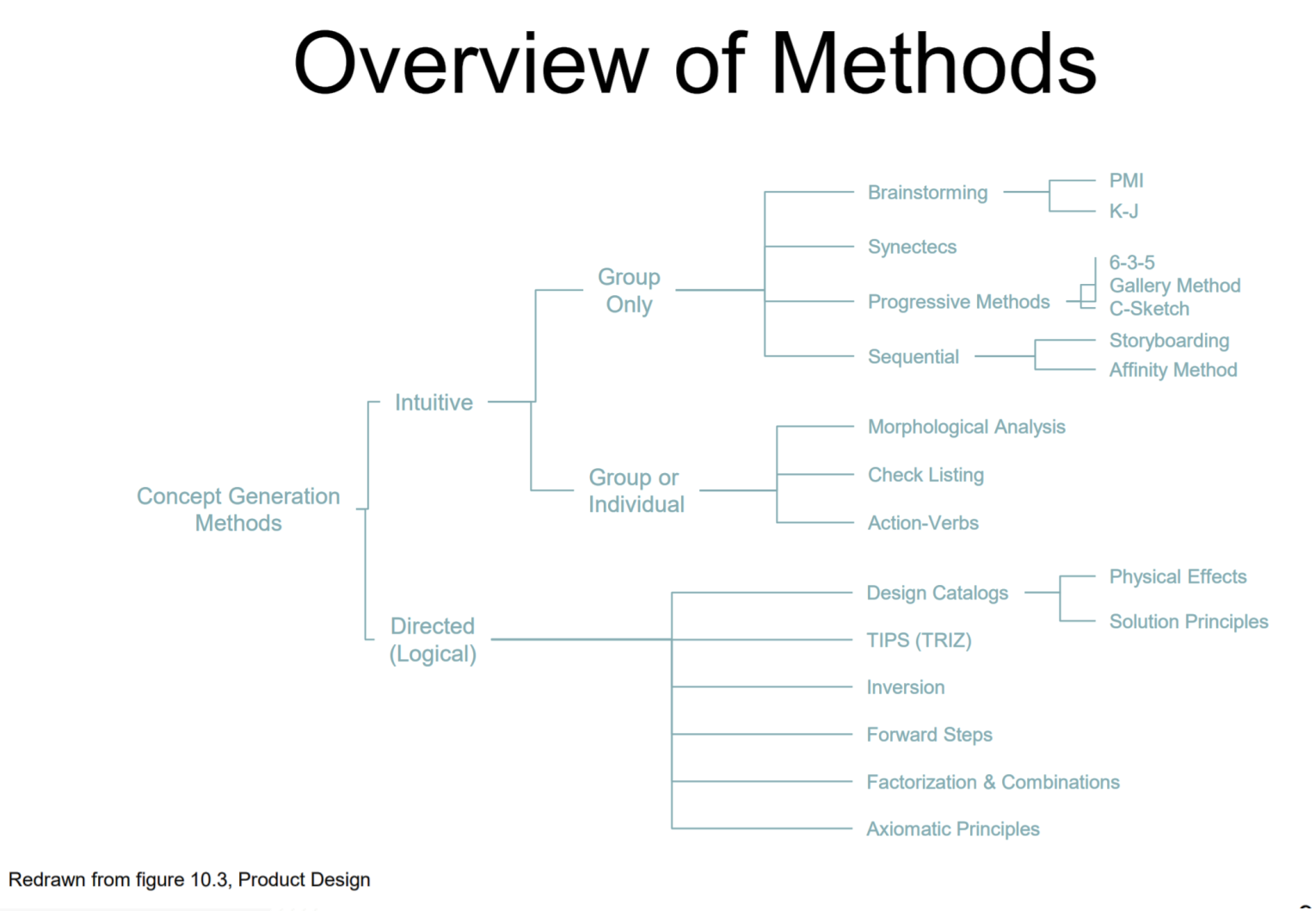
1. ~~Course Overview, Projects, Teams and Bids, Communication~~
2. ~~User needs / Engineering Design Specifications~~
3. ~~Market research and Prior Art~~
4. **Ideation, Concept Generation, Design Process**
5. **Industrial Design & Human Factors**
6. Risk, Liability, Codes & Standards
7. Prototyping
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

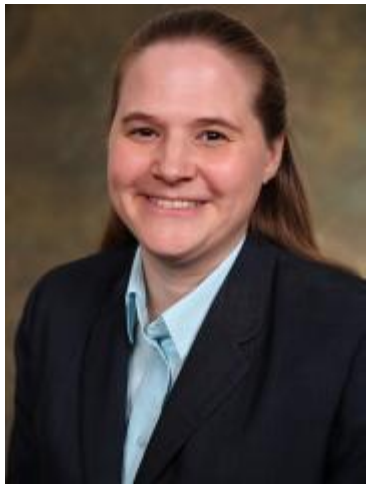
Georgia Tech
CREATING THE NEXT

Thank You!

3. Ideation & Concept Generation



Redrawn from figure 10.3, Product Design



Dr. Julie Linsey
Associate Professor
G.W.W. School of Mechanical Engineering

popin.it/xg6nim

Georgia Tech
CREATING THE NEXT

Discussion

popin.it/xg6nim

1. Interdisciplinary Group #2 | F03-Prince William Sound Underwater Profiling Vehicle

2. Operation Omega | 004-Dia-Bot (Diagnostic Robot) Platform

3. TBD (The Better Designers) | 007-Exobiology Extant Life Surveyor (EELS) robot sampling system

4. Temporary_team_name | 009-Robotic ophthalmic camera in a kiosk for self - administered eye exam

Ideation & Concept Generation

- What are the functions that the design needs to satisfy? (Functional decomposition)
- How can those functions be accomplished (means)? (morph charts)
- What are your integrated concepts/initial design alternatives, and how do they map to these functions and means?
- How will you weigh customer desires vs. specific functional performance?
- How are your concepts informed by and influenced by prior art?

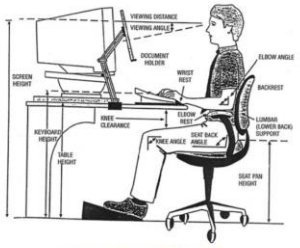
- What formal selection processes will you use to identify the promising concept(s) to be further explored?
- What feasibility analyses may be necessary for your concepts?

Thank You!

4. Industrial Design & Human Factors

Physical ergonomics

- How to design for the comfort and functioning of the human body
- Anthropometrics – measuring humans
- Physiology – how the body functions
- Bio Mechanics – study of the structure of the body from a mechanical view – forces and actions

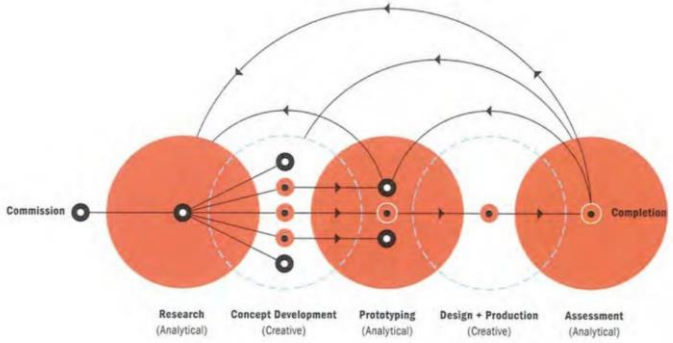


www.megep.meb.gov.tr

Systems - Visual Language

Prof. Wayne Li
Assistant Professor of Practice of Design and Engineering
Industrial Design

cargocollec4ve.com



Concepts | Design Process

Georgia Tech
CREATING THE NEXT

Industrial Design & Human Factors

- How do human factors impact your design problem?
- How will you explore human factors issues in your design process?
- What are the human interaction-points with your design problem? (from manufacture through to disposal)

- What Industrial Design considerations impact your design?
- How does visual hierarchy and language impact your design?
- How does branding factor into your design problem?

You may contact **Prof. Wayne Li** via email if you need more guidance on how you would apply this topic of Industrial Design to your project: wayne.li@design.gatech.edu

Georgia Tech
CREATING THE NEXT

Flipped Class for Week #5

- Everyone review the slides and videos on “Sustainability” and “Social Impact Assessment” listed under week #5 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 how sustainability (societal or environmental) considerations inform and impact their design?
  - 5 minutes for Q/A and discussion by class