Conceptual Design

Learning Outcomes
• Reflect on lessons learned from Snapshot Day and Logbook Review.
• Generate ideas for conceptual design work based on web review and list of best practices.
• Explain conceptual design review expectations to your client.

Resources
Conceptual Design Guidelines Posted on Web
Endpoints for Project Phases

Facilitation Plan

Preparation: Identify four students (2 ME’s and 2 ECE’s) to reflect on strengths and improvements to Snapshot Day from student point of view. Invite 2-3 faculty guests at Snapshot Day to share their perspectives on what they saw.

Class Session:
• FOLLOW-UP (20 min)
  Steve Beyerlein – Where we are on Capstone Project Roadmap?
  Greg Donohoe – Impact of Snapshot on Technical Advisors
  Round Robin of student SIIs
  CBE Faculty – Impact on VIEW Program
  Steve Beyerlein – Logbook Reflections
• CONCEPTUAL DESIGN PRACTICES (20 min)
  Steve Beyerlein – Web Page Design Tips
  Don Elger -- Conceptual Design Practices
  Steve Beyerlein – Design Review Expectations
• MEASURING & IMPROVING TEAM PERFORMANCE (25 min)
  Don Elger – Concept of Measurement
  Don Elger – Rubric for Team Performance
  Don Elger – Team Assessment of Performance

Follow-up:
Tentative dates for conceptual design reviews established with clients & instructors.
Web set-up for real-time documentation of conceptual design discoveries.
LOGBOOK REFLECTIONS

Honor Role:
Linnea Anderson, Lonny Cooper, Emily Peterman, Jim Michalk, Mary Hamann,
Katy McDonald, Devon Norma, Andy Vogt, Sam Creason, Cameron Meredith,
Colin Peterson, Jared McCombs, Mike Maughan

Customize for Personal Use. Your logbook is past, present, and future reference for work-in-progress. Ideally it should only be an arm’s length away when something significant happens on your project. Mold it to fit your style.

Make Every Entry Count. The central ideas associated with each entry should be clear in the title of the entry and reinforced through thoughtful discussion. Write enough to capture all the thinking behind each entry. If you don’t have something to say, don’t make an entry.

Annotated Visuals. Imagery supported by textual description often provides a system level view and can creative thinking. Remember, an isolated graphic (sketch/diagram) = 0 words, whereas a graphic plus 100 words of supporting discussion = 1000 words.

Apply Engineering Science. Many design decisions need quantitative justification. When conducting project research, seek to identify key variables as well as governing equations. Include helpful hints on using engineering tools to obtain quantitative results. Discuss the implications of what you find/calculate.

Demonstrate Project Learning. All projects benefit from self-directed learning of new concepts, principles, and methods that surround the design problem. Use your logbook to identify and process sources (books, articles, vendor catalogs, web sites, etc.) that expand your knowledge base for your project.

Benchmark Development. Analyzing your current skill set against long-term professional expectations is a great way of selecting which professional skill to work on next. Use the design team performance rubric to take stock of where you are and what you want to become.