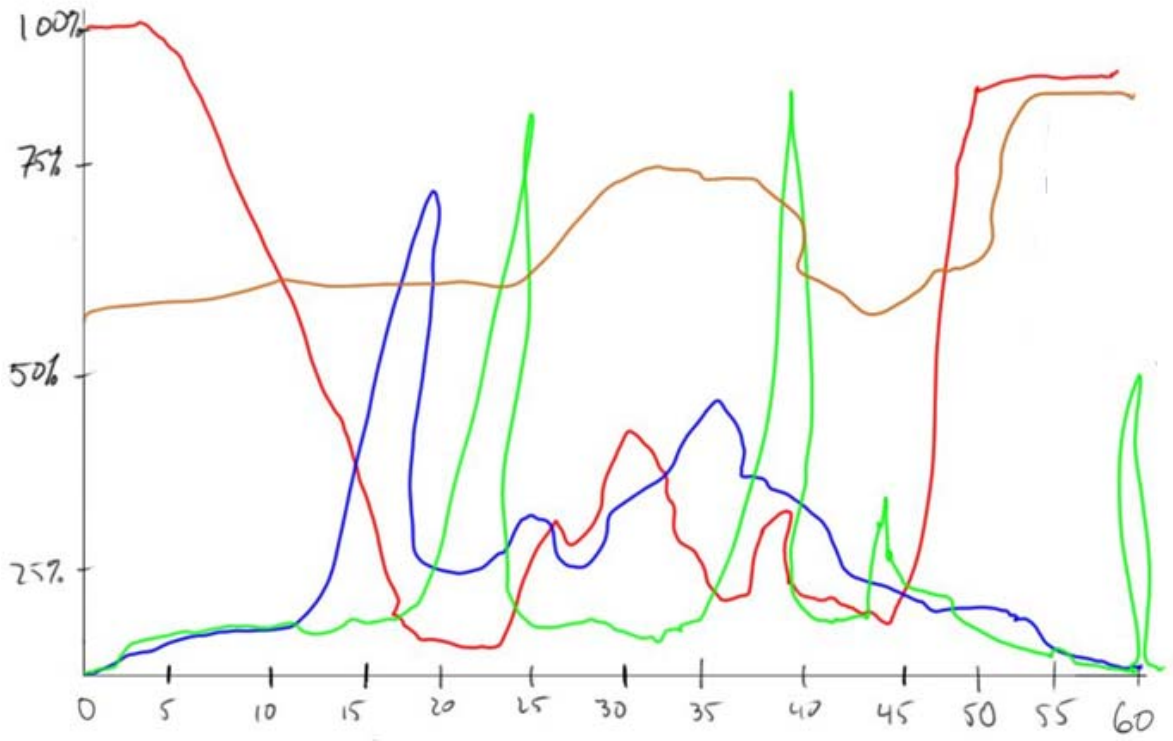
Project Conceptual Design Presentation -how to engage with audience



Electrical and Computer Engineering

www.mwftr.com /SD.html

Charles Kim – Howard University

Presentation Event – November 2013

Charles Kim – Howard University

What we will present

- For each team
  - “We have a project…..
  - We do this project because… {background, need, demand, importance, etc}
  - In plain English, this is the problem statement of the project ….
  - In technical terms, this project aims to satisfy the following requirements…
  - So we worked and came up with a few initial conceptual designs, and analyzed them and selected the best one
  - And this is the final design which has this hardware structure and software blocks
  - We plan to realize this final design into reality with the following timelines and implementation plans …..
  - The resources we have/need are such and such, and project cost of the project amounts to $$$$$
  - In conclusions, the project …… “

Presentation Format

- Interesting and attention grabbing introduction
- Tell what you are going to tell
- Tell
  - Background
  - Why: Needs and demands
  - What: Problems and Current Status of Arts
  - How: Conceptual Designs for Solution
  - When: Implementation and Evaluation Plan
  - Who: Team members in charge
  - Conclusion (Recap)
  - Clear and impressive conclusion by telling what you told

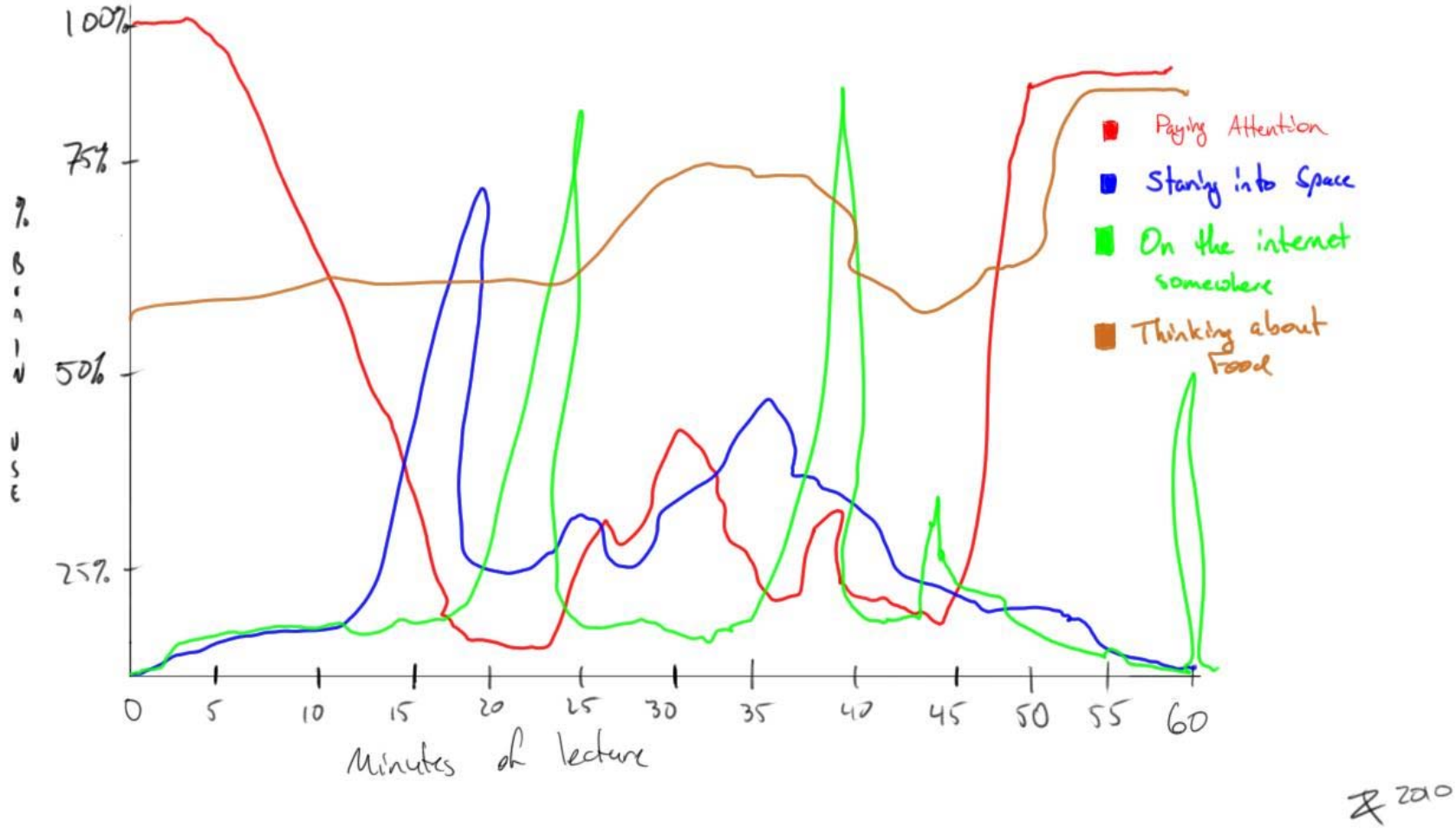
Conceptual Design Presentation Format - 1

- **Cover (1 slide)**
  - Title and Members
- **Background (2 slides)**
  - Background of the project (industry, technology, customer, etc)
  - Needs and demands in customer's point of view
- **Problem Formulation (2 slides)**
  - Refined Problem Definition in Engineering point of view (1 slide)
  - Design Requirements (1 slide): emphasis on alternative solutions, knowledge contents, and constraints
- **Current Status of Art (2 Slides)**
  - Prior art and available technology, weakness, etc
- **Solution Approaches (4 - 5 slides)**
  - Overall introduction of the technology field (with system level schematics) and summary of the alternative solution ideas (1 slide)
  - Explanation of the first and major conceptual design approach (why this may work)(1 slide)
  - Explanation of the other conceptual design approaches (1 slide)
  - Top Design Selection process

Conceptual Design Presentation Format - 2

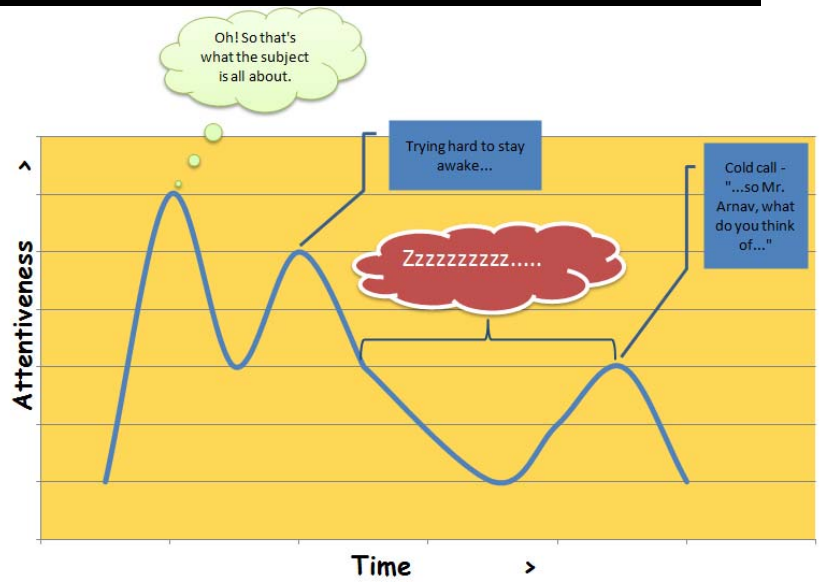
- **Implementation and Verification Plan (1 - 2 slides)**
  - Assigned tasks for finding solutions and solution implementation
  - Timelines and milestones
- **Final Product and Deliverables (1 slide)**
  - Deliverables
- **Costs and Resources (1 slide)**
  - Rough budget
  - Resources available and resources needed
- **Conclusion (1 slide)**
  - Crisp and clear summary of the proposal

How do we present better?
Remember the Attention Span



Big Difference between Written Report and Oral Presentation - 1

- Pace
  - Written Report:
    - Readers have freedom
    - own pace
    - control the amount of time
    - Read parts and change order
  - Oral Presentation:
    - Listeners have no freedom
    - must keep up with the speaker
    - no control over the time and topics



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Big Difference between Written Report and Oral Presentation - 2

- Content and Order
  - Written Report:
    - Readers can scan, reread, refer from text to illustrations and back, or stop to consult another text or a dictionary
  - Oral Presentation:
    - Listeners depends on the speaker making everything clear and in logical sequence
- Feedback
  - Written Report
    - No quick feedback to writers
  - Oral Presentation
    - Immediate Feedback to presenters

Big Difference between Written Report and Oral Presentation - 3

- Length:
  - Written Report
    - vary substantially
  - Oral Presentation
    - carefully planned not to exceed the pre-established time allocated
- Nonverbal Cues
  - Written Report
    - less dependent on nonverbal cues
  - Oral Presentation
    - Strong role of body language, tone, and other nonverbal cues

3 dimensions of Oral Presentation

- A. Content
  - Correct delivery of key messages
  - Know you subjects
  - Do your homework
  - 3 phases
    - Tell what you are going to tell (Outline) “Signpost”
    - Tell (Main Body) “Present” + [* Optional --- “Entertain”]
    - Tell what you just told (“Recap” & Conclusive Summary)
- B. Visuals
  - “Everything on a slide must contributes to its purpose”
- C. Delivery
  - Effective Presentation

A. The Content --- Outline

- For each team
  - "We have a project…..
  - We do this project because… {background, need, demand, importance, etc}
  - In plain English, this is the problem statement of the project ….
  - In technical terms, this project aims to satisfy the following requirements…
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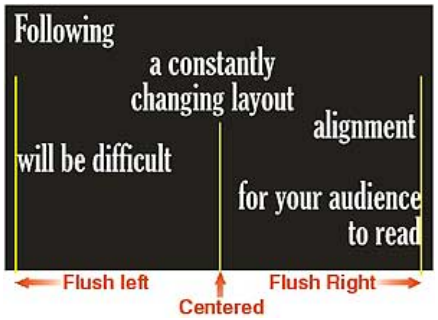
A. Presentation Content

- Effective use of repetition through the presentation
- Outline early, Summarize the key points at the end
- Necessary amount of information to convey message – Important highlights
- Hold audience interest: reinforce the motivation for the work being presented.

B. Presentation Visuals

- Slides for Presentation Assistance
  - One nice figure is better than a thousand words.
  - Discrete, not continuous: **Bullet Items**
  - Much more visually-oriented
  - Layout and Appearance are critical
  - Slide Storyboard

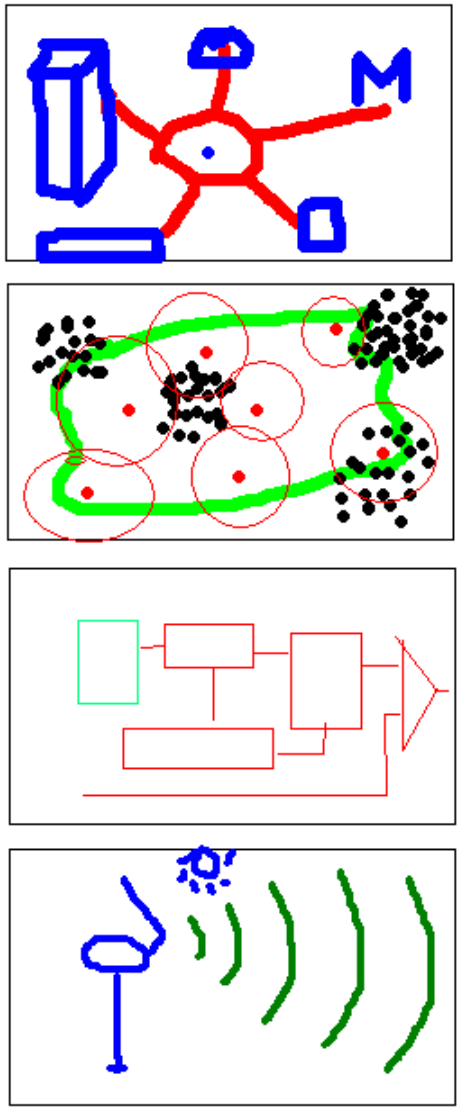


Storyboard

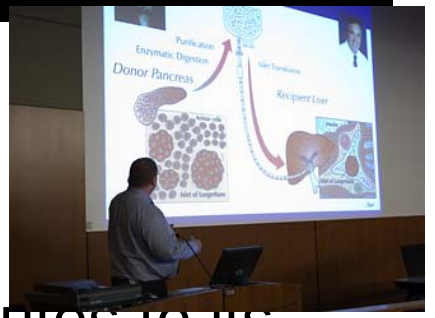
- **What is a storyboard?**
  - "a series of diagrams that are used to depict the composition of a video segment (oral presentation)"

Storyboard Steps for Presentation

- **Steps in storyboarding**
  - Develop a rough story line of presentation
  - Plan number figures to summarize the story ("project")
  - Printout each figure following the story line one a separate sheet of paper and assemble into a storyboard
  - See if you can make out the "Project story" from the figures.
  - Add, delete, and revise figures and bullet points to support the overall theme
  - THEN, add texts
  - Add more slides if necessary



Tips for good Visuals



- Start from storyboard
- Begin from the objectives of presentation
- Determine the purpose of each slide
- Make sure that everything on the slide contributes to its purpose
- No more than 2 ideas per slide
- Replace a text-dominated slide with a simple figure with legend
- Bulleted lists (with **big font size**)
  - Show contents without writing complete sentences
- Spell out acronyms and abbreviations
- Avoid unnecessary animation – use only that assists the clarity of presentation
- **NOTE –Visuals are an aid to the presentation. So you have to be able to talk and present (even without the aid)**

Bad Slide Example

Background

- Who:

  The requirements for this project have been principally set by Northrop Grumman NGC.

- What:

  Design of the Grid-Eye Sensor System will detect both the position and the intensity of the heat radiated by the surface of either a single or multiple targets.

- Why:

  Northrop Grumman will thus have the choice to utilize the finished product for commercial and military purposes as they see fit in satisfying their needs.

Bad Slide Example

BACKGROUND

The foundation and idea of the project was conceptualized by the previous senior design group, who were not able to fulfill their list of robotic tasks due to time constraints. However, we have been tasked to further build on their work by not only fulfilling their list of requirements, but also adding our own robotic tasks as well. With that being said, the idea of an autonomous robot appealed to the group.

Bad Slide Example

Conclusion

Overall after assessing the situation, we have decided that creating this robot would be beneficial because its completion can assist its user in a great deal. It does not have a need that is substantially large however since convenience is an aspect that humans strive for on a daily basis this will prove to be a worthy device to purchase. From the design requirements that we mapped out, to the price that it is going to cost this device can be constructed and be fully functional by the project completion date.

Good Slide Example

Background

- 284M people visually impaired, 39M blind
- Limitations and challenges
  - Lack of surrounding awareness
  - Lack access to information
- Customers needs
  - Reliable navigation assistance
  - More accessible information
  - Other PDA like functions: calendar, planner, clock

MORE INDEPENDENCE, BETTER LIVING!

Good Slide Example

Background

How do people ensure they have all items needed for an event?

REMINDERS

CHECKLISTS

How is monitoring and identification done in our society today?

- RFID TECHNOLOGY

  An RFID system consists of

  Reader

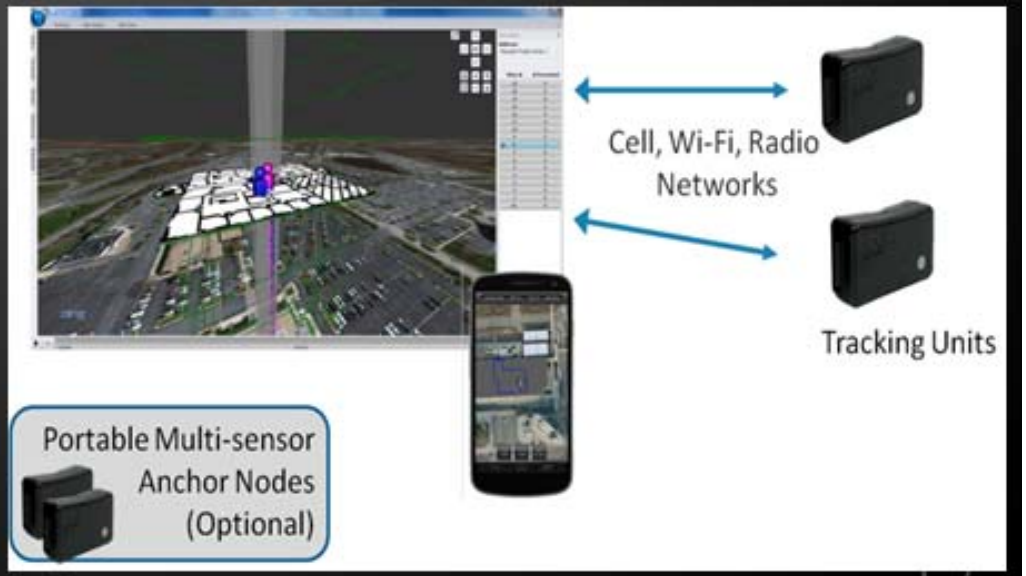
  Transponder or tag

11/14/2012

Good Slide Example

HOMING DEVICE: IPS

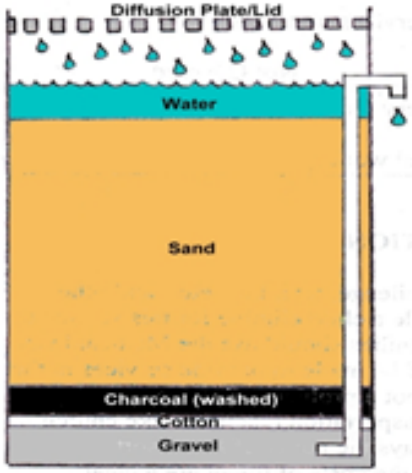
- Indoor Positioning System
- TRX Systems
- NEON Indoor Maps
  - Bluetooth (Radio)
  - Wi-Fi
  - Cellular



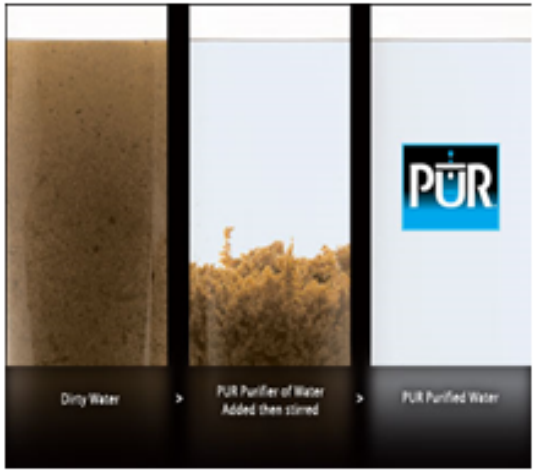
Good Slide Example

Current Status of Art

Solar Distillation



Biosand Filters



Chemical Tablets

Drawbacks:

Biosand Filters - Timely process, Limited to the amount of use per day
Solar Distillation -Water bottles have to be present
Chemical Disinfection- Supply of chemical tablets must be present

Methods do not use a technical approach

Good Slide Example

Project Management

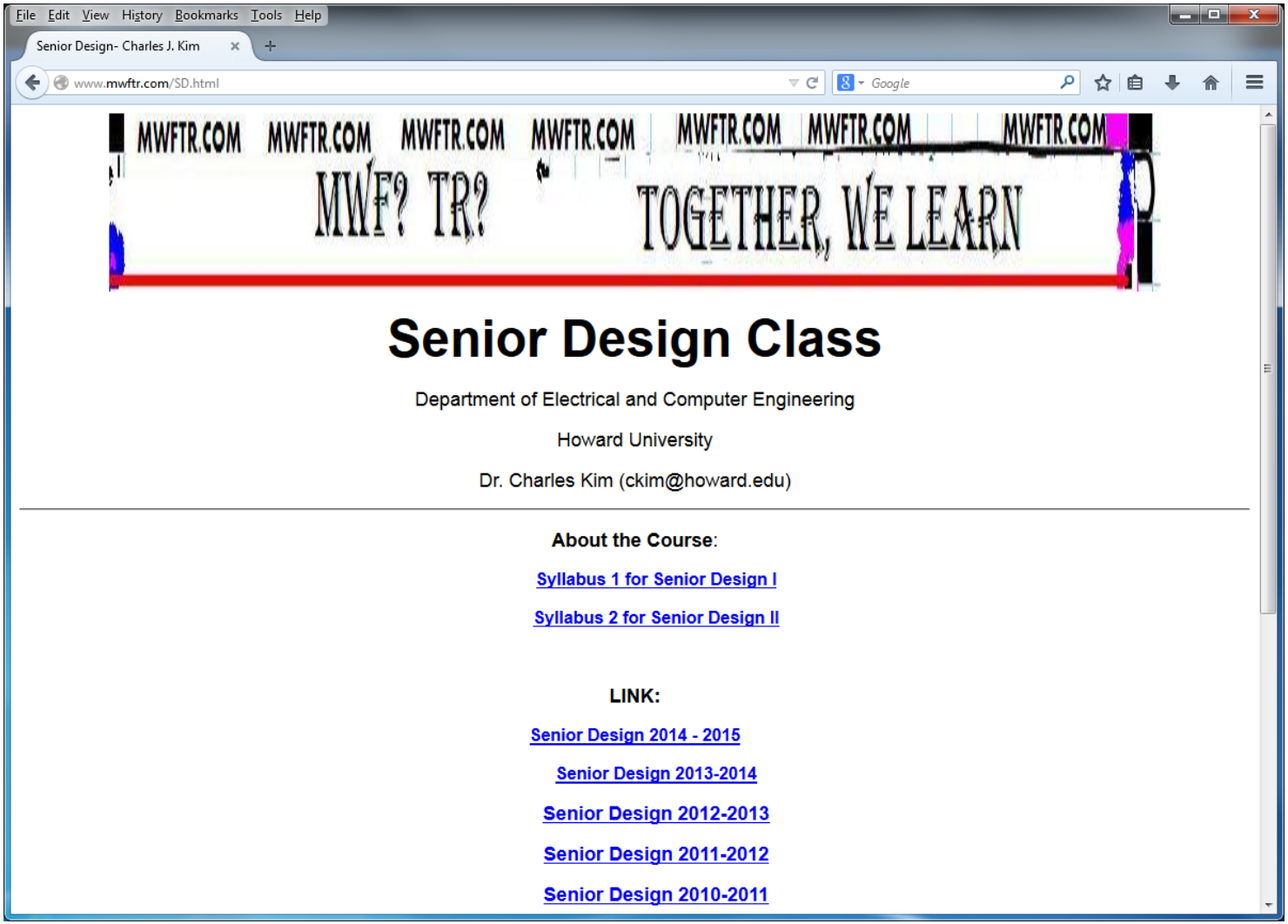
Project Planner

ACTIVITY	PLAN START	PLAN DURATION	ACTUAL START	ACTUAL DURATION	PERCENT COMPLETE
Register for Case Competition	1	1	1	1	100%
Research Energy Efficient Solutior	2	2	2	2	0%
Receive Cases	4	1	4	1	0%
Research Buildings Related to Cas	5	1	5	1	0%
Compile a Proposal for Each Case	5	12	5	12	0%
Compose a Presentation for DOE	17	4	17	4	0%
Prepare for ECE Day	22	4	22	4	0%

PERIODS: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

More examples – good and bad

- Check out the previous senior design presentations at www.mwftr.com/SD.html



An Interesting Presentation - 2013

Laser_dimitrio.pptx

Figure only presentation

C. Presentation Delivery

- Remember “You are better presenter than you think”
- Present in a relaxed, yet professional way
- Convey precise technical information clear to audience
- Practice, Practice, and Practice

Delivery Tips - Voice

- Avoid reading slides word for word
- Project your voice and keep your head up and speak so that those in the back of the room can hear you
- Speak at relaxed pace
- Avoid repeat sayings: “basically”
- Maintain precision
- Use complete sentences when speaking and avoid pausing for too long
- Strong and Impressive Conclusion

Delivery Tips – Posture and Body Language

- Maintain Eye Contact with audience
  - Pick 3- 4 people in different places, & rotate
- Avoid twitching, swaying, or snapping fingers
- Avoid your hands in pockets or crossing arms
- Dress appropriately – Dress Code
- Show enthusiasm – Body Language

Dress Code for Project Conceptual Design Presentation

- Public Presentation (Dec 3): Business/Smart Casual

www.thedressreview.com

CASUAL DRESSES

TOP 3 SUGGESTIONS ABOUT WHAT BUSINESS CASUAL DRESS TO WEAR

Body Language -- Is this true interpretation?

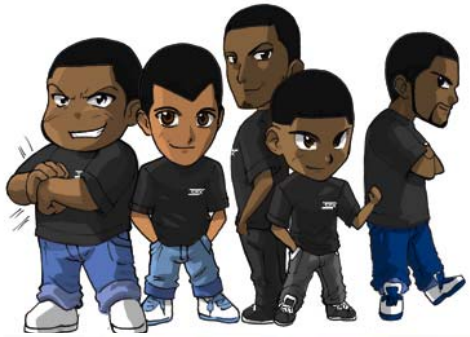
BASS/SCHULER entertainment

Delivery Tips – Answering questions

- Cannot be fully planned ahead of time
- Try to anticipate questions
- Advice for handling questions effectively
  - Make sure you understand the question
  - Knowledgeable humility is the best ally
    - Avoid belittling question asker
    - Use questions as a means of clarification
    - Learn from the questions
    - If you don't know the answer, say so.
- Repeat the question, in a large room, so that everyone knows what it is

Team Presentation

- **Format**
  - Equally divided presentation times
    - First, tell the audience who is going to talk on what
    - Take turns
    - Then, the first person concludes
  - Dialogue Style presentation
  - Tag team presentation
    - Anchormen and remote correspondents



- **Tips**
  - Plan ahead and do practice, a lot.
  - Everyone should share the presentation
  - Smooth Transition from a presenter to another
    - A presenter should wrap up own segment,
    - then build a bridge that links what they said to the next presenter
  - Decide Position and Roles in advance
    - how you will position yourselves
    - who will be where and
    - what they will do while another member is speaking?
  - Take pains to make sure that
    - everyone in the group is doing their share
    - Everyone performs well on your presentation

Effective Technical Communication -Summary

- Precise and Complete
- Know the subject
- Grab and hold audience interest
- Preserve simplicity
- Eye Contact
- Check Audience
- Be Prepared
- Practice and take pains
- Roles and Smooth Transitions

Last Week Schedule

- **Slide file submission:**
  - Due: Wed Nov 26, 2014 (via email)
- **Slide Correction & Rehearsal:** Dec 1 - 2
- **Public Presentation Wed, Dec 3**
  - Conceptual Design
- **Final Exam: F Dec 5 11 - 12**
- **Project Binder Submission: M Dec 8**
- **Peer Evaluation: M Dec 8**

Grading Criteria

A. Subject Matter	A1. Clear Description of Subject Matter
	A2. Well defined problem with quantitative standards and constraints
	A3. Sound technical approach
	A4. Clear Objectives, Tasks, and Deliverables
	A5. Well researched Current Status of Art
B. Oral Presentation	B1. Hold audience attention through the presentation with direct eye contact
	B2. Demonstration of full knowledge of the subject
	B3. Effective use of slides and visual aids
	B4. Professional and knowledgable Q&A
	B5. Smooth transition of team members speaking in different subjects
Total	**Total Score**

Today's Class Activity

- Story Board Session 1 (TODAY) --- **Picture/Graph/Figure-only** 10 - 15 slides for the Conceptual Design presentation

- Story Board Session 2 (team basis) --- Adding texts

- Slide file generation (team basis): **Slide file submission due: Wed. Nov 26**