

An aerial photograph of a city grid, likely Singapore, with a semi-transparent blue overlay. The text is centered within this overlay.

# ORAL PRESENTATIONS (OP)

EMBEDDED COMMUNICATING ENGINEERING WORKSHOPS  
*for* **COMPUTER ENGINEERING** (CG1112)

**CENTRE FOR ENGLISH LANGUAGE COMMUNICATION**  
**NATIONAL UNIVERSITY OF SINGAPORE**

# OBJECTIVES OF WORKSHOP

By the end of the course, students will be able to **prepare for and conduct a team oral presentation on their project** by:

## Part 1: Preparing for oral presentations

- 1.1 Approaching/explaining the concepts/process logically and concisely
- 1.2 Structuring the content as messages and visual evidence
- 1.3 Using appropriate visual aids (whiteboard or projector) to explain the information.

## Part 2: Conducting oral presentations

- 2.1 Using verbal and non-verbal techniques for effective delivery
- 2.2 Interacting with the audience by responding to/asking questions and checking for understanding



# LESSON SCHEDULE

| Week | Focus   | Learning Outcomes  | Preparation   | Activities  | Follow-up  |
|------|---|--|---|---|--|
| 9    | Workshop 1 (conferencing on Design Report)                  | By the end of the session, students will be able to: <ul style="list-style-type: none"> <li>- Write a clear structured interim report on the team project.</li> </ul>  | <ol style="list-style-type: none"> <li>1. Project design report template (uploaded on IVLE)</li> <li>2. Submit design reports by end Week 8.</li> </ol> | <ol style="list-style-type: none"> <li>1. Tutor provides detailed comments on marked reports.</li> </ol>  | Students revise project design report in preparation for final report.   |
| 10   | Workshops 2 and 3 – Preparing for team Project Presentation | By the end of the session, students will be able to: <ul style="list-style-type: none"> <li>- Deliver an effective oral presentation as part of a project team.</li> <li>- Handle questions from the audience</li> </ul> | View a sample team project presentation video and comment on its effectiveness.   | <ol style="list-style-type: none"> <li>1. Review the Assertion-Evidence Approach in technical presentations.</li> <li>2. In small groups, students prepare their project presentation outlines and slides.</li> <li>3. Students practise giving mock presentations with peer and tutor feedback.</li> </ol> | <p>Students prepare for a mock team OP in Workshop 3 (in the same week).</p> <p>15 mins per team – all members have to speak</p> |

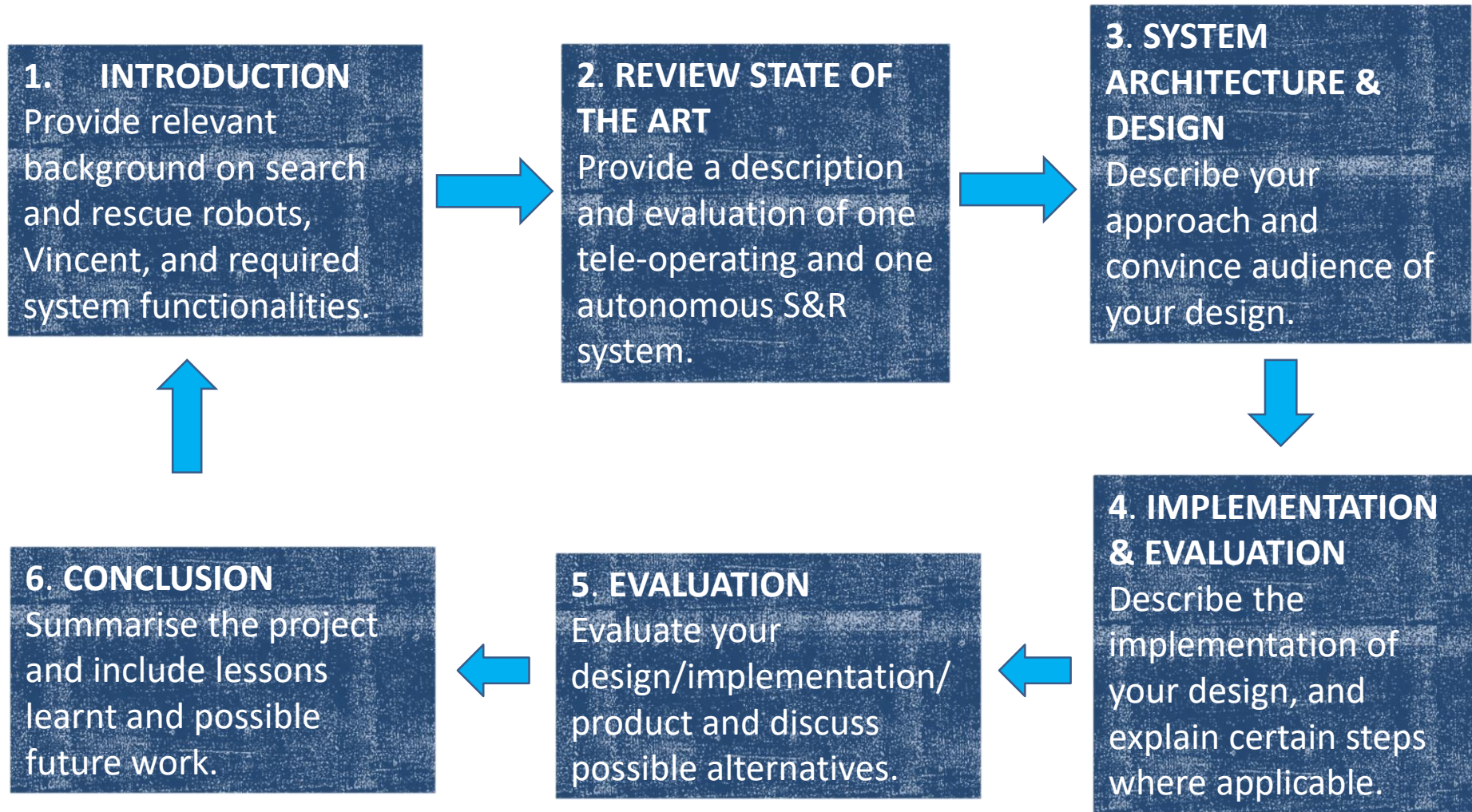
# LESSON SCHEDULE

| Week | Focus  | Learning Outcomes  | Preparation  | Activities   | Follow-up   |
|------|--|--|--|--|---|
| 12   | Workshop 4 – Final Project Report (Conferencing in small groups) | By the end of the session, students will be able to:<br>- Write a clear structured report final report on their project. | - Read Final Project report template (uploaded on IVLE)<br>- Write a draft of your final report and submit it to your CELC tutor by Monday of Week 12. | 1. Tutors provide feedback and discuss improvements to drafts. | Students submit report to CG1112 by end of Week 13 for grading by both CELC and CEG teams.                |
| 13   | Final Presentation Assessment                                    |  |  | Present your final OP in your project teams.                   | Tutors will be present to provide feedback. OPs will be videotaped and uploaded so that tutors can grade. |





Your OP is an **oral report** of your project, so should have a similar structure as your formal report. **Example:**



Can follow the final report template (TBC)



# ASSERTION-EVIDENCE APPROACH IN TECHNICAL PRESENTATIONS

It operates on 3 key principles:

1. Build your content on **messages**, and not topics.
2. Support the messages with **visual evidence**, not bulleted lists.
3. Explain this evidence by **fashioning words on the spot**.

**Source:** Rethinking presentations in Science and Engineering - “Assertion-Evidence Approach” <http://www.assertion-evidence.com>, ed. by Michael Alley (University Park: Penn State, 2016).



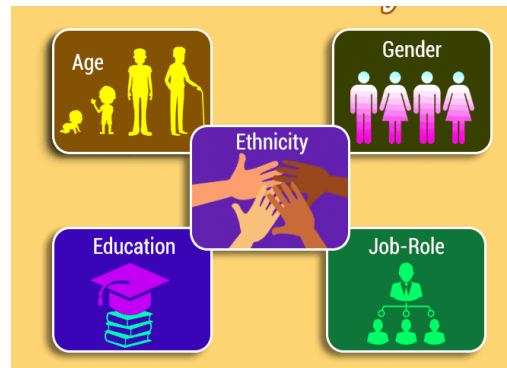
Excellent technical presentations are marked by **content**, **passion**, and a keen sense of the **audience**.



**Content** worthy of attention



Speaker's **passion**



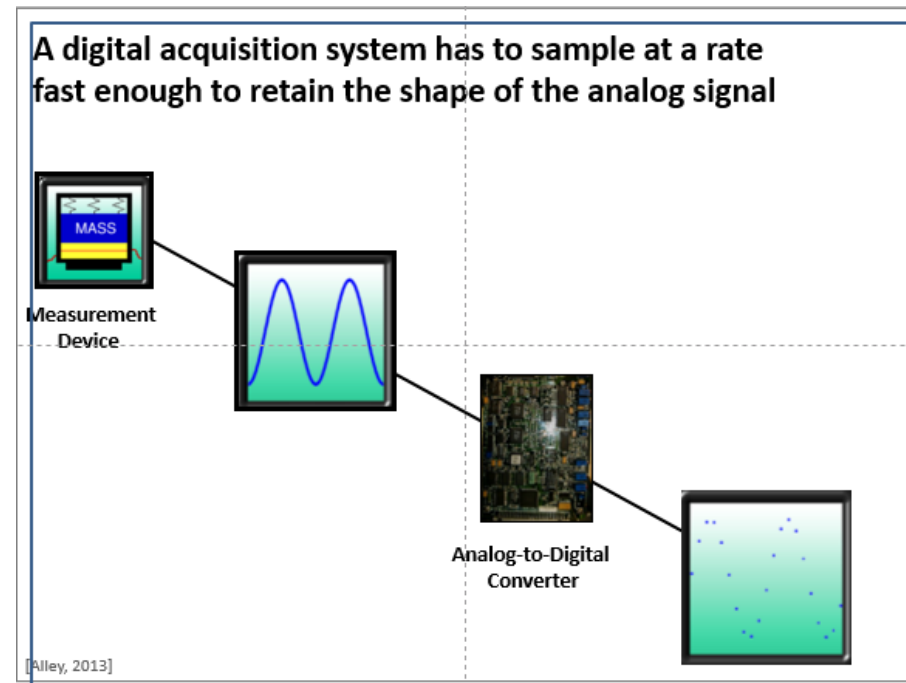
Awareness of the **audience**

# Build your **content** on messages, and not topics.

**Digital Acquisition System Sampling**

- Vibration measured by accelerometer
  - Analog voltage produced
  - Sinusoidal shape
- Analog signal converted to digital signal
- Signal sampled at a specific rate
- Rate  $\rightarrow$  high enough to retain analog shape

[Alley, 2013]



## Default Powerpoint format:

Topic as title and sub-topics are bulleted

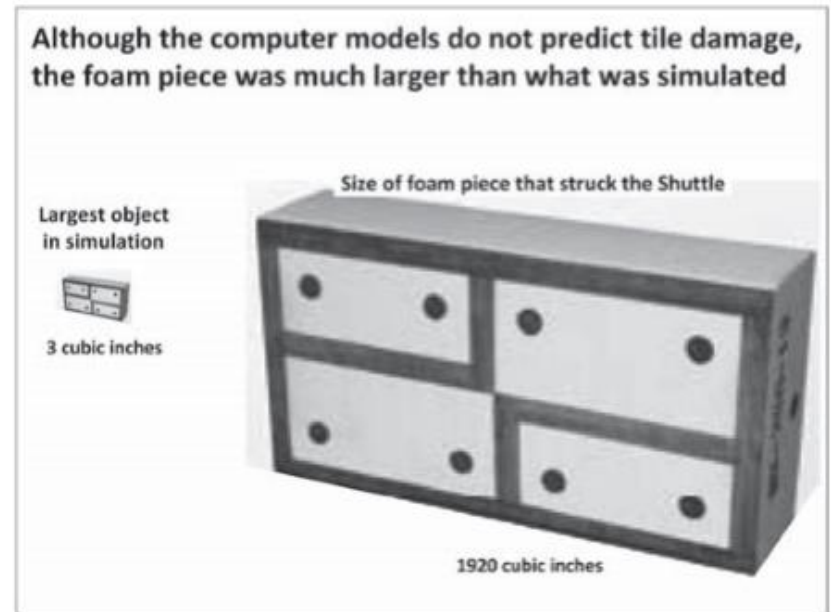
**Assertion-Evidence format:** Title is a statement asserting a fact or opinion



# Support the messages with **visual evidence**, not bulleted lists.

## Multimedia principles in instructional design (Mayer, 2005)

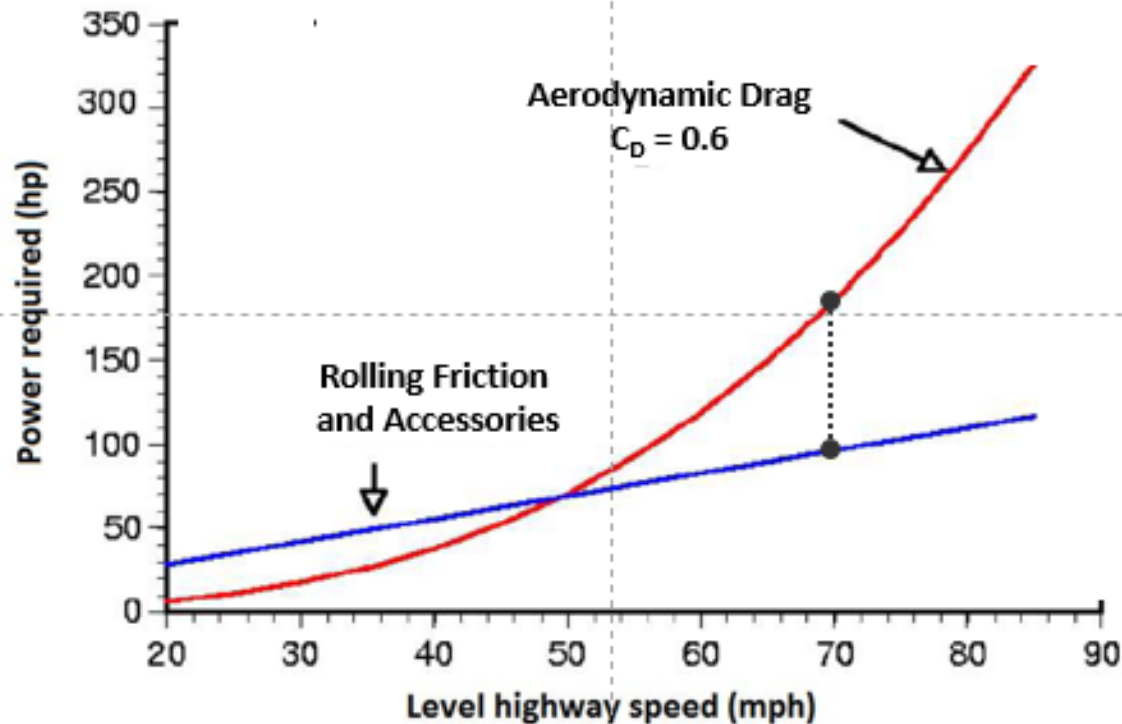
1. Individuals learn better when **words and pictures** are presented, rather than from words alone.
2. Audiences show superior comprehension and retention when **extraneous information is removed** from the presentation.
3. Signalling: useful presentations highlight the **relationships** that allow understanding of highly interactive information.
4. Principle of redundancy states that “people learn more deeply from **graphics and narration** than from graphics, narration, and online text”



An A-E version of the Boeing slide

Support the messages with **visual evidence**,  
not bulleted lists.

At typical highway speeds, overcoming drag requires about two-thirds of a truck engine's output

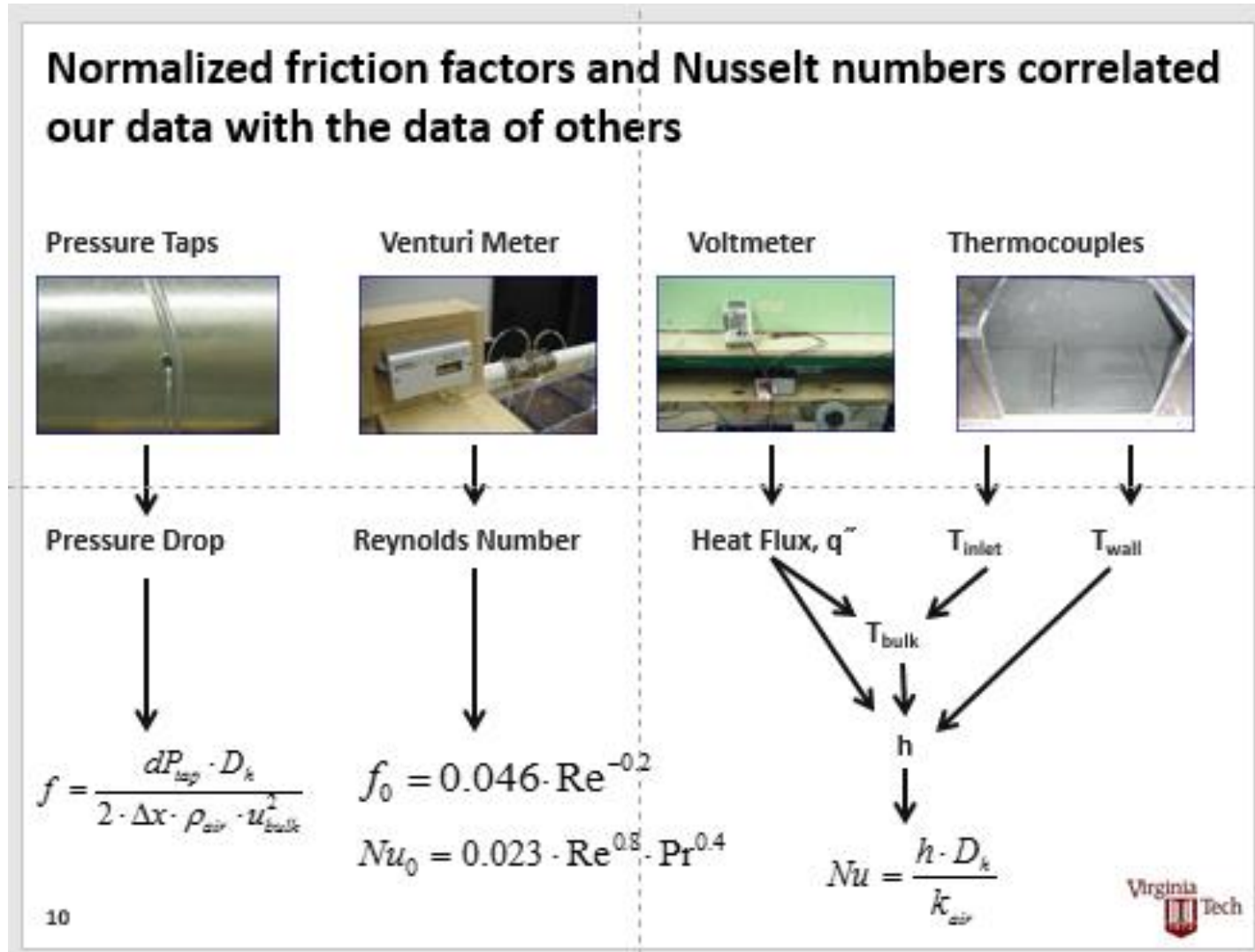


Support the messages with **visual evidence**,  
not bulleted lists.

Search and rescue robots are useful in post-disaster situations

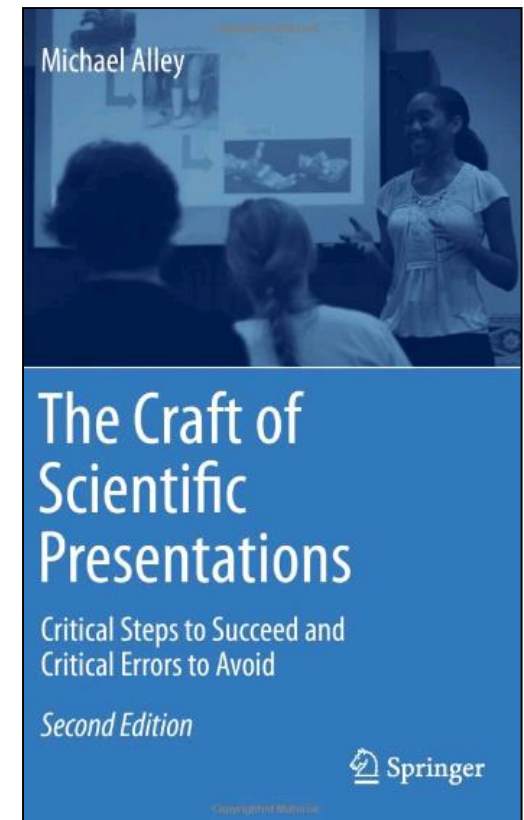


# Support the messages with **visual evidence**, not bulleted lists.





# Many engineers and scientists have had success using the assertion-evidence approach. (Alley, 2013)



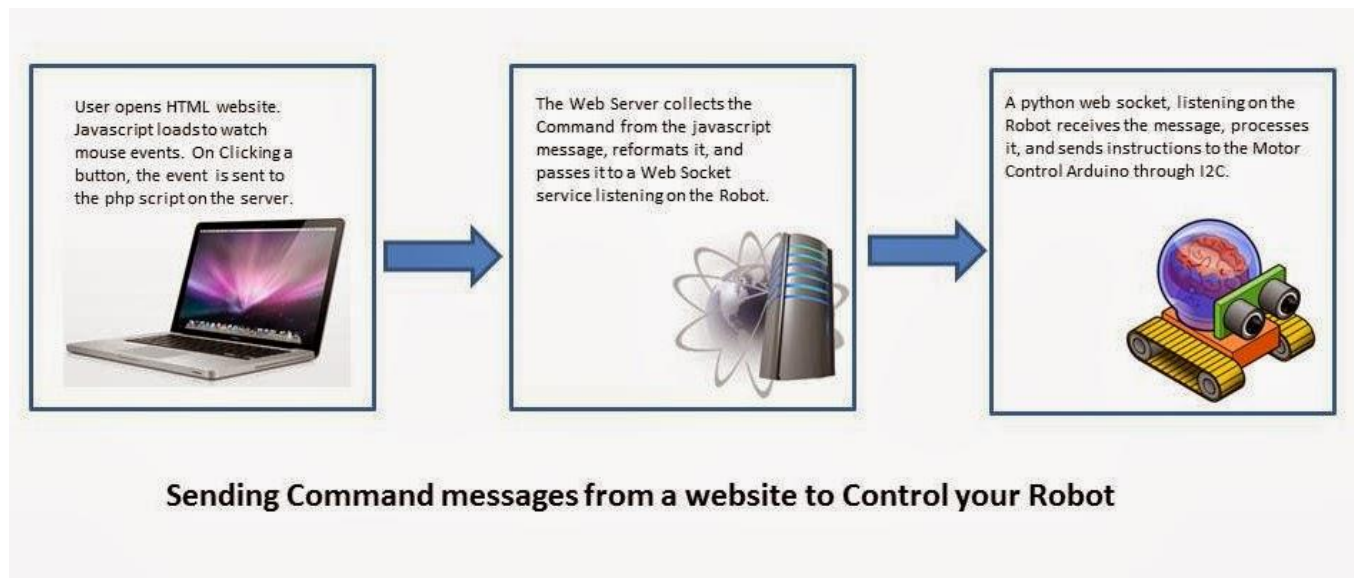
[writing.engr.psu.edu/speaking.html](http://writing.engr.psu.edu/speaking.html)



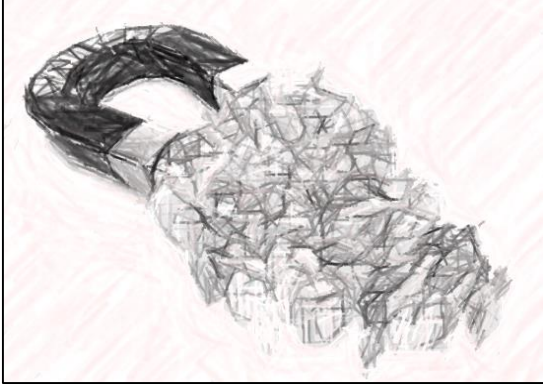
# When explaining a process, consider the **significance** of each stage.

**1.** Provide background to identify and define the process. Explain why understanding this process is useful or important.

**2.** Describe the process in a logical order using diagrams and appropriate transition words/phrases.



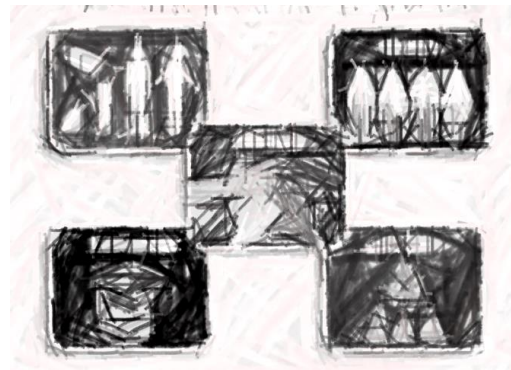
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Content worthy of attention



Speaker's **passion**



Awareness of the audience

# Convey passion using your **voice** – a powerful tool.

**Register:** meaning of the message (e.g. fun/ serious/ power/ authority) is determined by depth of your tone.

**Timbre:** Quality of your voice (e.g. rich/smooth/warm). Breathing and posture

**Prosody:** stress and intonation patterns. Tone difference between questions and statements.

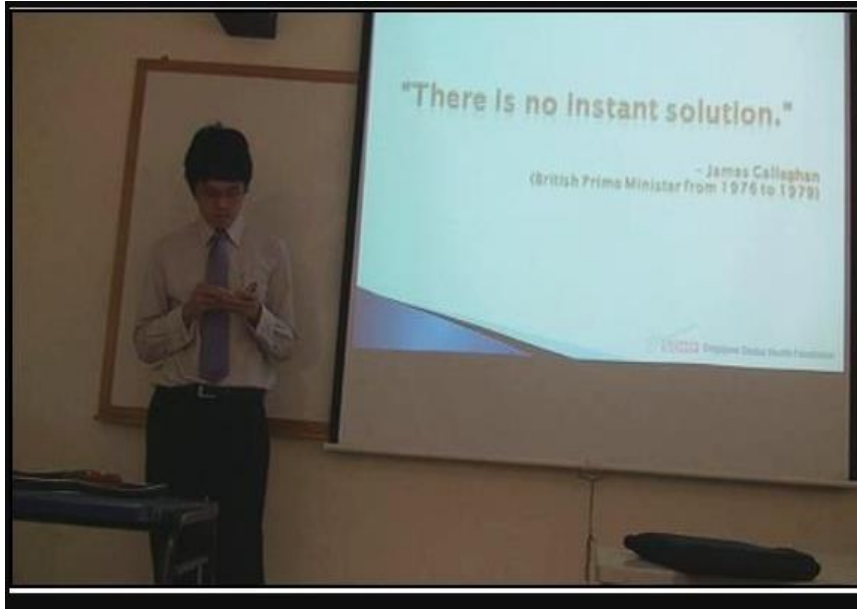
**Pace:** change pace: fast to show excitement vs slow down to emphasize important points vs silence

**Pitch:** high vs middle vs low

**Volume:** high vs middle vs low loudness



# Explain the evidence using your own words.



Own the content.

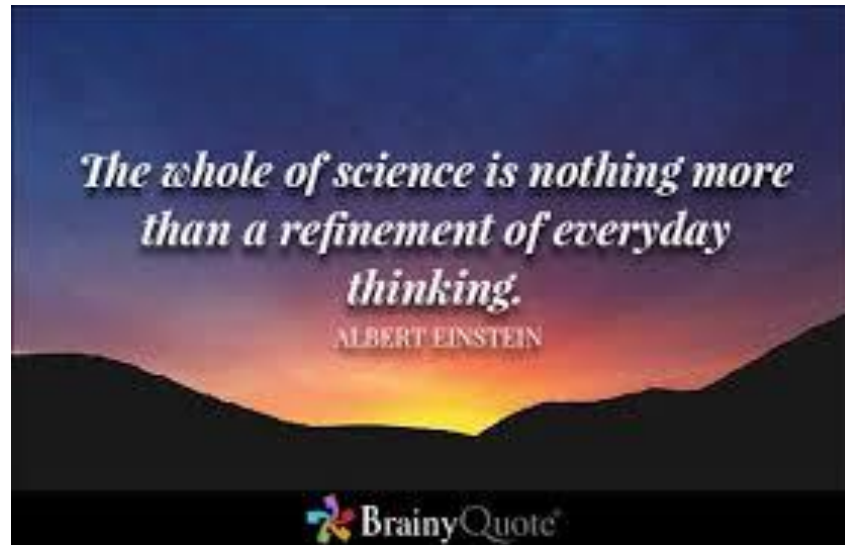
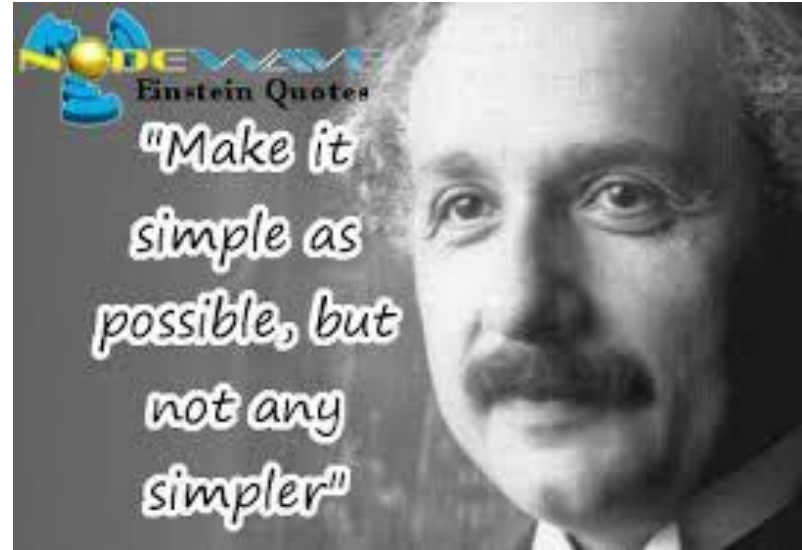
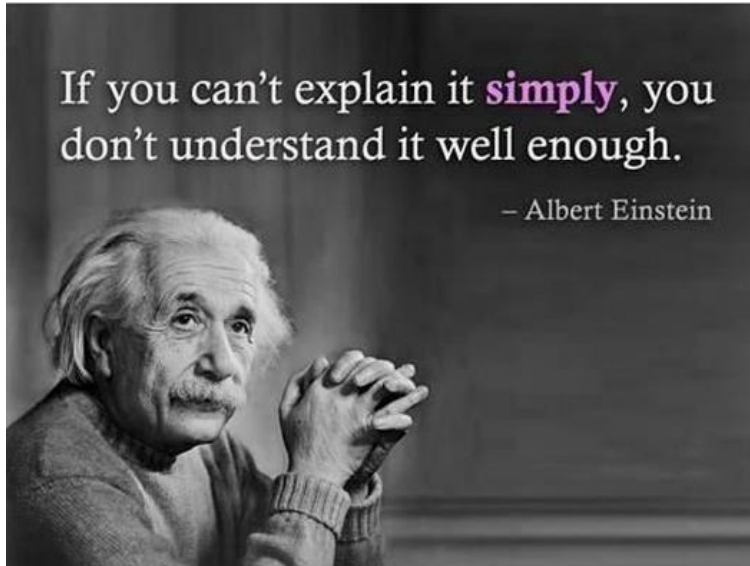
DEMO

Watch this video to see how a **team** of Penn State engineering students analyze how the Kingda Ka roller coaster works. The team is part of the organization Utree: Undergraduate teaching and research





# Use **clear**, accurate and **accessible** language.



Convey passion using your **facial expression**.

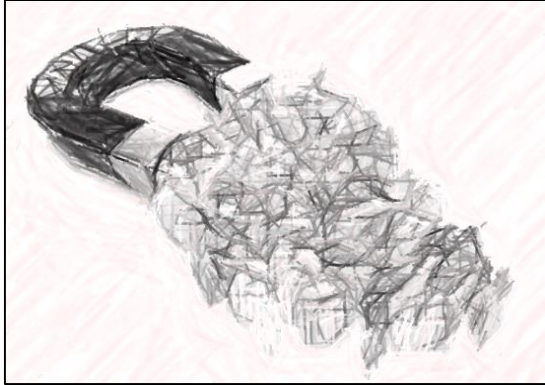


# Convey passion using **non-verbal body language** that is **congruent** with your words.



Attire  
Posture  
Position  
Gestures  
Use of space

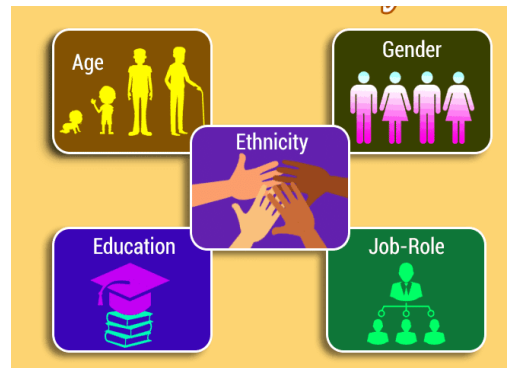
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Content worthy of attention



Speaker's passion



Awareness of the **audience**



**Before:** Choose your content and words to match audience needs.



**WIIFM?**  
*What's In It For Me?*

Put yourself in the shoes of the audience.



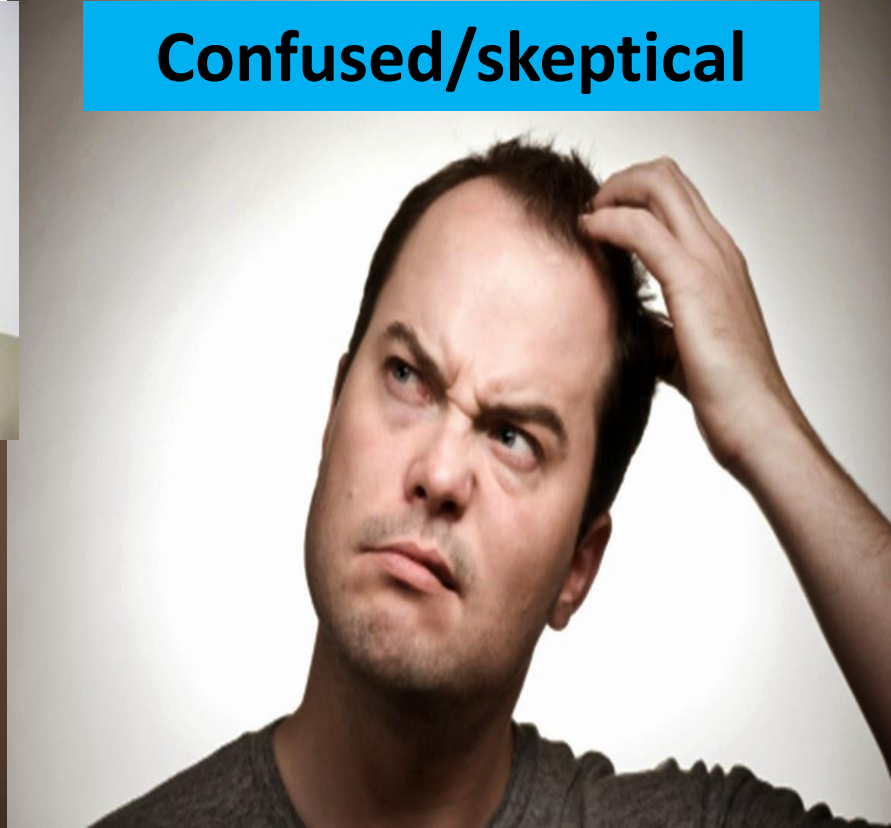
**Before:** Choose your content and words to match audience needs.



**Who is your audience?** Peer (fellow engineers) and supervisors (Profs and TAs)

**During:** Observe and respond to your audience's cues. 

**Confused/skeptical**



***‘If you are perhaps feeling a little confused, let me put it another way...’***

***‘If you are not entirely convinced, then let me explain/show you the statistics...’***

**During:** Observe and respond to your audience's cues. 



**Bored**

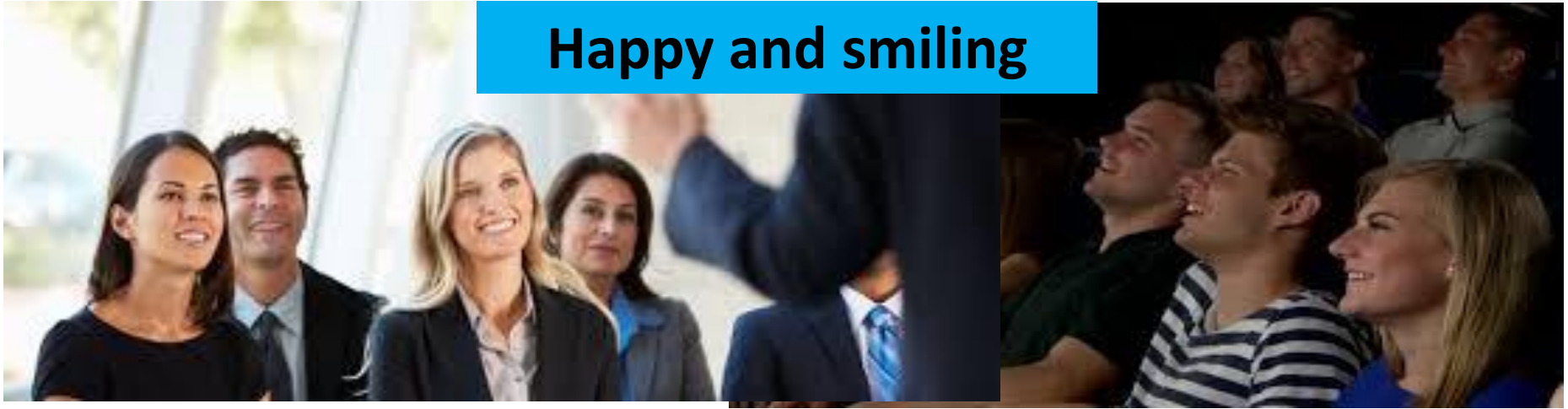


**Ask a question, do a simple poll  
or change the pace, volume, position/posture  
or tell an anecdote or joke.**



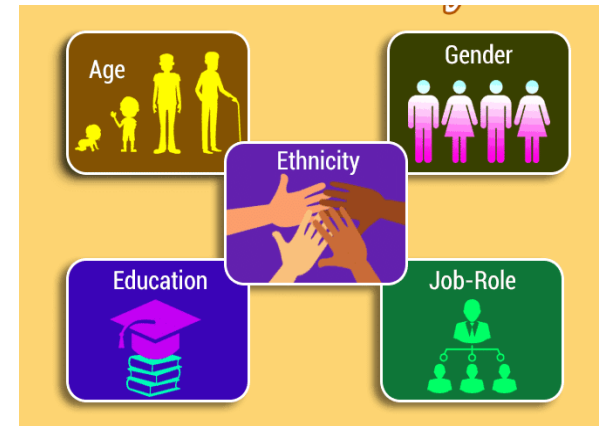
**During:** Observe and respond to your audience's cues. 

**Happy and smiling**



**Smile back.  
Laugh with them.  
Enjoy it.**

# Conclude by stating the main message in your presentation.



To make an excellent technical presentation, ensure that your **content** is noteworthy, deliver it with **passion**, and maintain a keen sense of the **audience**.

Questions?



## Team presentations: Your presentation should display evidence of good teamwork.



Focus on making smooth transitions.

➤➤ <https://www.youtube.com/watch?v=f6Xa1fq-oPo>

How to introduce the next speaker in a group presentation



Show interest in your team mates' presentations.



Practise together as a team. Prepare for Q&A. One person to answer and not all talk at once. If another member wants to add on, DO NOT contradict the previous member.

# Prepare to handle questions from the audience.

Formulate replies as suggested in this table. You should do 1 and 2 before answering the question.

| No. | Function   | Example of reply   |
|-----|--|--|
| 1   | Thank the questioner.  | <i>Thank you for the question. That's a good question. Thank you for that.</i>             |
| 2   | Ensure everyone has heard the question. Paraphrase if necessary.   | <i>X has asked ...</i>   |
| 3   | Seek clarification from the questioner.  | <i>Could you repeat your question?<br/>Are you asking if... ?</i>                          |
| 4   | Choose a strategy to give yourself time.   | <i>That's something I'd like to give some thought to.<br/>I'd like to think about that</i> |
| 5   | Seek information from the audience and promote discussion.   | <i>That's an interesting point. Would anyone like to comment/take that up?</i>             |
| 6   | Deal with several people trying to speak at one time; nominate the first and tell the others you will get to them. | <i>Thank you—this gentleman/lady first, and then your question next, and then...</i>       |

# Evaluation criteria for OP (for CELC component)

| Component  | Description  | %   |
|--|--|-----|
| <b>Visuals</b>                                     | <ul style="list-style-type: none"><li>• Visuals contribute significantly to the delivery</li><li>• Clear, professional and visually appealing</li><li>• Excellent handling of visuals:</li></ul>   | 20% |
| <b>Audience Awareness/Non-verbal communication</b> | <ul style="list-style-type: none"><li>• Speaker spontaneously responds to audience feedback throughout presentation</li><li>• Appears completely at ease during the presentation</li><li>• Excellent use of non-verbal communication that enhances delivery and engages audience</li><li>• Good responses in Q&amp;A</li></ul> | 30% |
| <b>Voice and language use</b>                      | <p>Voice is natural, relaxed and uses wide range of vocal techniques to enhance delivery</p> <p>Extremely fluent with very few language errors or inappropriate pauses</p> <ul style="list-style-type: none"><li>• Appropriate register is used throughout the speech</li></ul>  | 30% |

# Evaluation criteria for OP (for CELC component)

| Component                       | Description  | %   |
|---------------------------------|--|-----|
| <b>Teamwork and transitions</b> | <p><b>Presentation transitions:</b></p> <ul style="list-style-type: none"><li>• The team works well together in presenting and reinforcing each other's presentations</li><li>• There is a smooth taking over/handing over of presentation between most speakers.</li></ul> <p><b>Overall team effort:</b></p> <ul style="list-style-type: none"><li>• The group projects itself well as a team in terms of coordination and support for each other, e.g. in terms of visuals, attire, Q&amp;A and presentation style.</li></ul> | 20% |

Every member of the same team will get the same mark for this teamwork component.



*At the next session this week*

**Task:** Conduct a 15-min presentation per team.

**Prepare:**

- State your group, and group members' names on the cover slide.
- Deliver an OP applying principles of the A-E approach.
- Prepare to accept feedback from others.
- Prepare to listen to others present and provide feedback.
- Prepare for Q & A.





## Preparing for your mock project presentation in the next session

- Outline your presentation with your groupmates.
- Prepare visuals for the first parts of the presentation.
- Consider what you will say when each visual is being shown.