

Making a Presentation

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As an engineer, you will make many presentations, ranging from the 5-minute, across your boss's desk, impromptu explanation of why your idea will work, to the well-organized all-day formal design review. You need to develop skills appropriate for all types of presentations. The purpose of this note is to give you some advice on preparing and giving a formal presentation in the 10-minute to 1-hour range.

Organizing the presentation

1. **Know how long you're supposed to talk**, and make sure your presentation will take no longer. At conferences, presentations are normally allotted 15-30 minutes, with a minute or so for the "chair" to introduce the speaker and a few minutes for questions and answers. Try to leave time for your audience to ask questions. Definitely do not make the chair have to tell you to stop. A good rule of thumb is to have no more than 1 overhead slide per minute of talking time, but this can vary widely based on how much information you put on each slide.
2. **Tell them what you're going to tell them, tell them, and then tell them what you told them.** Any presentation of more than 5 slides or so should include 3 specific slides: a ***title slide*** telling your audience what you're talking about, who you are, where you work, and how you can be reached; an ***overview slide*** listing the major topics in your talk (limit to just a few bullets); and a ***summary slide*** reiterating the major points and conclusions of your work.

Formatting the presentation

3. **Prepare all the slides using a consistent style.** A simple header and/or footer with the project title, date, logo, page number, and so forth adds to the professionalism of the presentation. Also, use the same fonts throughout the presentation. This is especially true in a group presentation.
4. **Make sure the fonts are large enough to read from the back of the room.** Use at least 18 point fonts for everything, and preferably larger. This includes the legends and axis labels on plots. Learn how to change the font size on your matlab, mathcad and mathematica plots. Do not put up a slide and say, "*I know you can't read this, but it's really an important slide.*"
5. **Don't use too many equations.** It's acceptable to have equations, and sometimes you'll be focusing on the equations so you'll need lots of them. But, if you're trying to show how a system design depends on a bunch of complicated interactions that are described by equations, you'll be better off using word descriptions of the interactions and making some nice figures that show the important results.

6. **Don't make your slides too wordy.** If possible, keep all your bullets to one line or maybe two. Keep all those extra words that you find necessary in your head and use them when you're talking about the information in the bullet.
7. **Make your graphics, especially drawings, as clear and legible as you can.** Make the lines thicker so they'll be easy to see. Use black lines on white background instead of white lines on black background (this is especially true if you plan to print the drawings as well).
8. **Always use leading zeros in numbers.** The decimal points are sometimes difficult to see, so that it's easy to see .473 as 473. No one will be confused by 0.473 though.
9. **Don't use too many decimal places.** Seldom do you really know the answer to 23 significant digits, so don't display that many. Probably 1 or 2 significant digits are sufficient for any numbers you give in a presentation.

Giving the presentation

10. **Introduce yourself.** Often you'll be introduced by someone else, in which case you should briefly thank the introducer ("*Thank you, Bob. Of all the introductions I've had, that one is the most recent.*"). If you're not introduced, use the title slide as an opportunity to say something brief about who you are. It's a good idea to have a couple of sentences memorized to get you started.
11. **Introduce your presentation.** The title is right there on your title slide, so you don't have to read it to the audience. However, you should tell them something about your main subject before you jump into the presentation.
12. **Give your overview.** Here you'll be displaying the overview slide and telling your audience what the main topics of your talk are. Don't just read the bullets. Add a little flavor to what they can read for themselves. Try to avoid saying, "*And I'll conclude with some conclusions.*"
13. **Give the main body of the talk.** Again, *don't read the bullets.* But, also don't just put the slide up, let them read it and move on. Explain what the bullets are shorthand for.
14. **Don't stand beside the projector.** If you stand beside the projector and point at your slides with a pen, then about half the audience won't be able to see the screen. Put your slide up and move out of the way. Use a pointer. A yardstick will work fine, but you might want to consider getting a nice laser pointer.
15. **Don't throw slides away.** That is, don't make a really complicated slide and then only leave it up there for 15 seconds. Figure out how long it takes a viewer to figure out what the slide's about and then give your audience at least that long. And, talk about the slide while they're studying it. Explain the features they may not be able to decipher easily for themselves.
16. **Don't stomp or slap your thigh.** Many people seem inclined to stomp a lot or to slap their thigh during presentations. Don't do it.

17. **Don't say *uh* or *um* or *ah* too much.** Verbal pauses are distracting. Try to avoid them and get used to using silent pauses while you gather your thoughts.
18. **Don't use vague adjectives.** Try to keep your words objective and specific.
19. **Give your summary and closing.** With your summary slide displayed, remind your audience what the main features of your presentation were. Don't be afraid to brag a little, as long as you're honest about your claims. Then thank the audience for their attention and tell them you'd be happy to answer any questions.