NILE UNIVERSITY of NIGERIA

FACULTY OF ENGINEERING

GET 101 2021. 2nd Intake. Introduction to Engineering.
Presentation 5 - ENGINEERING COMMUNICATION

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&

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بسم الله الرحمن الرحيم

1. INTRODUCTION

1. INTRODUCTION

Basic Concepts

- Most successful engineers have developed good communication skills,
    - oral
    - written
    - multimedia formats.
- You *must* be able to communicate effectively


ZUCCHERO
Coffee Break

2. BASIC PRESENTATION SKILLS

Basic Concepts

- Students consider giving an oral presentation a more daunting task than submitting written documents
- Focus on several factors when planning a presentation.
    - *who is* the audience?
    - what is my purpose?
    - where is all the equipment that I need?
    - when am I on the program agenda?
    - why am I giving this talk?
    - how long should I talk?

2. BASIC PRESENTATION SKILLS

PrePlanning

- **Who is my audience?**
  - Know the age group, demographics,etc
  - prior knowledge about the topic, and
  - what positions or opinions they may hold.

- **What is my purpose?**
  - What do I hope to accomplish?
  - What response do I expect?
  - What will the audience get out of my speech?

2. BASIC PRESENTATION SKILLS

PrePlanning

- **Where is all the equipment I need?**
  - Where will the talk be held?
- **When am I on the program agenda?**
  - Will I be the first presenter (when audience is most alert) or
  - the last one before lunch (when they are becoming restless) or
  - after lunch (when they are sleepy)?
  - What will I need to do to keep my listeners attentive?

2. BASIC PRESENTATION SKILLS

PrePlanning

- **Why am I giving this talk?**
    - Why is the audience here?
- **How long should I talk?**
    - Remember that only few people can focus for more than 20 minutes.
    - Trim your talk so that people will ask for more information rather than thinking “When will he sit down?”

2. BASIC PRESENTATION SKILLS

PrePlanning

- 5 Ws and 1 H
  - Who
  - What
  - Where
  - When
  - Why
  - How

2. BASIC PRESENTATION SKILLS

Preparing the Verbal Elements

- The structure of your presentation is vital.
- As a simple example, which of the following two sentences is easier to understand?

> **Sentence A:** While perambulating in the antithesis of the metropolis to evade the intemperate brouhaha thereof, my visual cortex perceived an ophidian.
>
> **Sentence B:** I saw a snake while taking a relaxing walk in the woods.

- sentence A tends to obscure the underlying meaning.
  - may be detrimental to a professional engineering presentation.

2. BASIC PRESENTATION SKILLS

Preparing the Verbal Elements

The 4-S formula for structuring presentations.

- **Shortness:**
    - Use short sentences,
    - avoid too many details, and
    - do not talk too long.

- **Simplicity:**
    - Avoid wordy, lengthy phrases.

2. BASIC PRESENTATION SKILLS

Preparing the Verbal Elements

The 4-S formula for structuring presentations.

- **Strength:**
    - Use active voice and action verbs,
    - not passive voice and
    - not “to be” verbs.

- **Sincerity:**
    - Convey empathy, understanding, and
    - respect for the audience.

2. BASIC PRESENTATION SKILLS

Preparing the Verbal Elements

- The 4-S Formula
  - Short
  - Simple
  - Strong
  - Sincere

2. BASIC PRESENTATION SKILLS

Three Structural Parts

Keep in mind the purpose of discrete elements of a speech.

- **Introduction:**
    - Purpose: to capture the interest of the audience.
    - Your first task is to *hook your audience*.
    - What is it about your subject that *they* (and not necessarily you) would find most interesting and relevant?
- **Body:**
    - Purpose: to keep your audience interested.
    - They will continue to pay attention if you keep the material interesting and relevant to them.
    - Divide the presentation into two or three main points.
    - Use one or more simple examples to illustrate each major point.

2. BASIC PRESENTATION SKILLS

Three Structural Parts

- **Conclusion:**
  - Purpose: to pull it all together.
  - Summarise major points.
  - Show appreciation for your audience's attention.
  - Allow for a few questions, but be sensitive to your audience and the other speakers.

2. BASIC PRESENTATION SKILLS

Preparing Visual Aids

- Presentations could have slides with unreadable text, incomprehensible graphics, or annoying special effects.
- Well-designed graphics can greatly enhance your presentation,
    - easier for the audience to understand,
    - keeping their attention focused.
- A picture really is worth about 2^{10} words!

2. BASIC PRESENTATION SKILLS

Preparing Visual Aids

Presentations Helpful Hints

- Keep each slide simple, with one concept per slide.
    - As a rule, use no more than *six lines per slide*.
    - Each slide should correspond to an average of *60 seconds* of speech.
- If possible, make slides in *landscape* format.
- Present data in simple graphs rather than in lists or tables.
    - Avoid excessively complex graphs with extensive data.
    - If you must present tables, divide them among several slides.

2. BASIC PRESENTATION SKILLS

Preparing Visual Aids

- Pictures, diagrams, and video simulations all may enhance your presentation.
    - Be sure that all are large enough to be seen by the audience, and
    - have colour schemes that do not appear washed out when projected.
    - Often, such items are designed for viewing on a small screen and do not project well.
    - Be sure to test them prior to your presentation.

2. BASIC PRESENTATION SKILLS

Preparing Visual Aids

- Use bullet points with important phrases to convey ideas.
    - Avoid complete sentences.
- Large size text is best.
    - A font size of at least 18 points and preferably no less than 24 points
    - This includes *all* objects
        - axis and legend captions,
        - table headings,
        - figure symbols, and
        - subscripts.

2. BASIC PRESENTATION SKILLS

Preparing Visual Aids

- Use high-contrast colours.
    - Avoid fancy fonts, such as cursive, or
    - Avoid light colours, such as yellow or other pastels.
    - Avoid using all capitals.
- Use a light background and dark print to keep the room brighter.

2. BASIC PRESENTATION SKILLS

Preparing Visual Aids

- Keep background styles simple and
    - minimise animation to avoid distracting from the presentation
    - Keep all the slide backgrounds the same throughout a single presentation.


ZUCCHERO
Coffee Break

3. SAMPLE PRESENTATIONS

Introduction

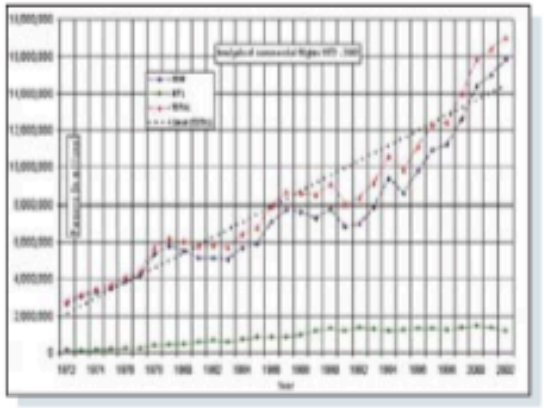
- To illustrate the visual aids caveats, we critiqued three student presentations.
- What is wrong with each of them?
    - see below

3. SAMPLE PRESENTATIONS

Example 5.1 - Sample Student Presentation 1

1

2



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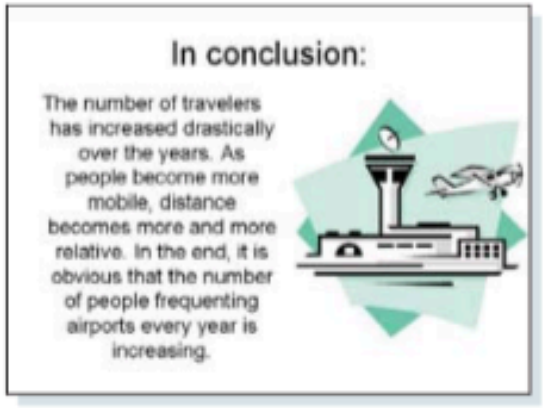

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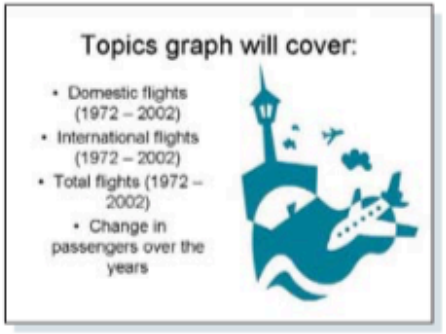
3. SAMPLE PRESENTATIONS

Example 5.1 - Sample Student Presentation 1

Original Presentation: Critique

- Slide 1 font is difficult to read, poor choice of abbreviation for approximately.
- Slide 2 dates and text appear disjointed due to text size and graphic; graphic is too large.
- Slide 3 graph is difficult to read.
- Slide 4 too many words; graphic is too large.

1



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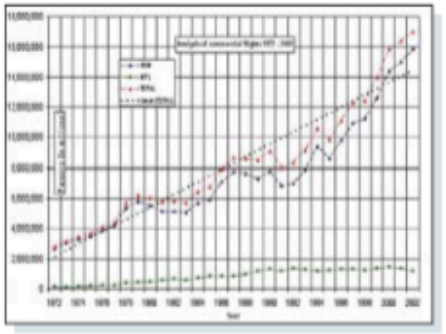

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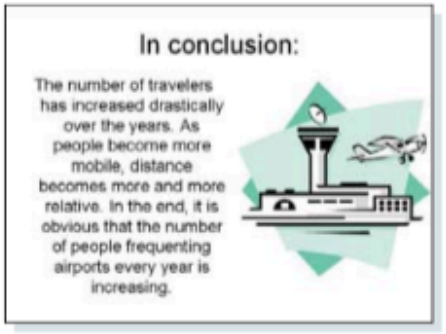

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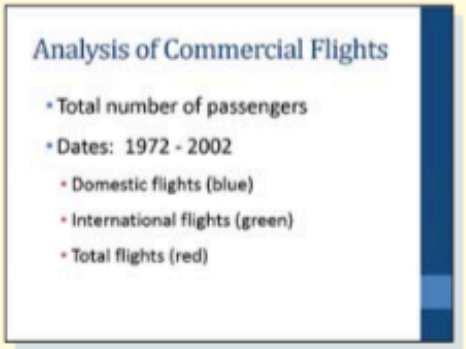
3. SAMPLE PRESENTATIONS

Example 5.1 - Sample Student Presentation 1

Improved Presentation:

1



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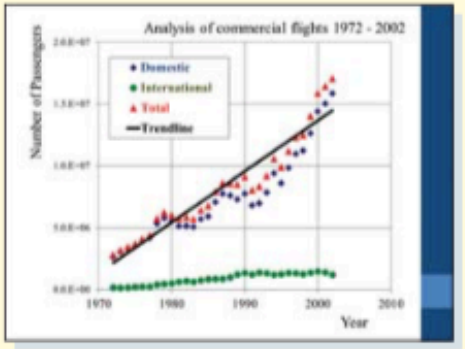

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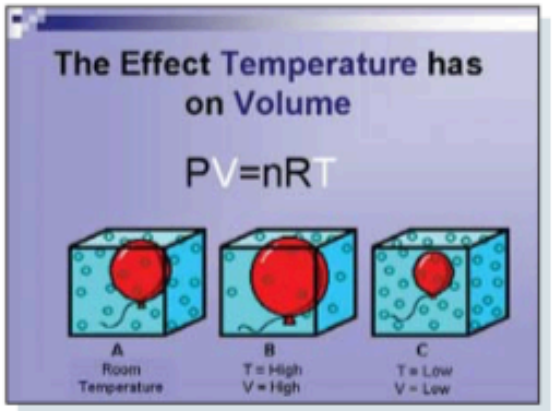
3. SAMPLE PRESENTATIONS

Example 5.2 - Sample Student Presentation 2

1

2



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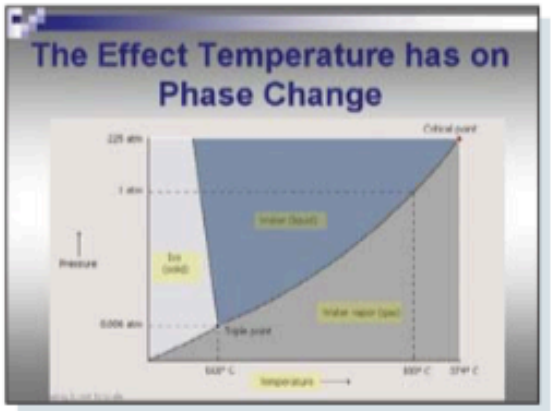

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3. SAMPLE PRESENTATIONS

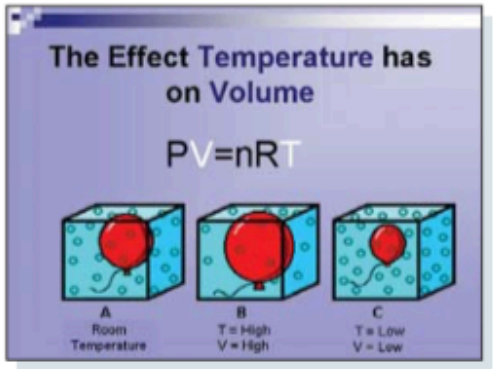
Example 5.2 - Sample Student Presentation 2

Original Presentation: Critique

- Different graphics on every page is distracting.
- White color is hard to project over graphics.
- Slide 4 graphic is difficult to read; yellow highlights make it worse.

1

2



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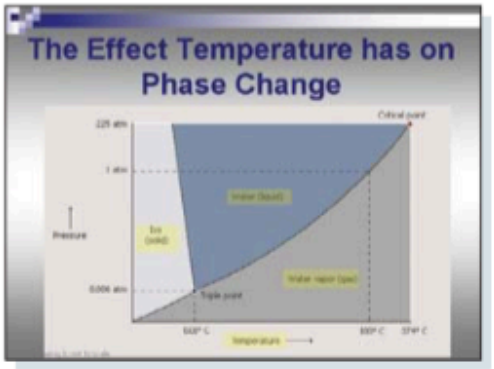

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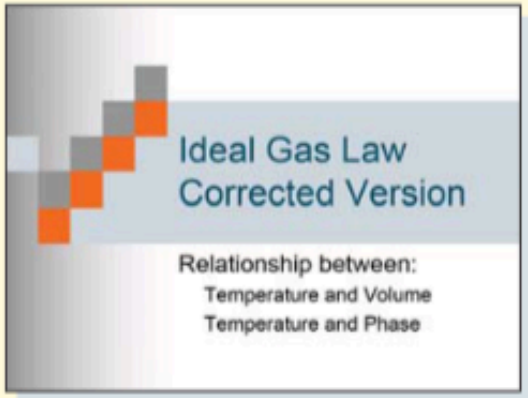
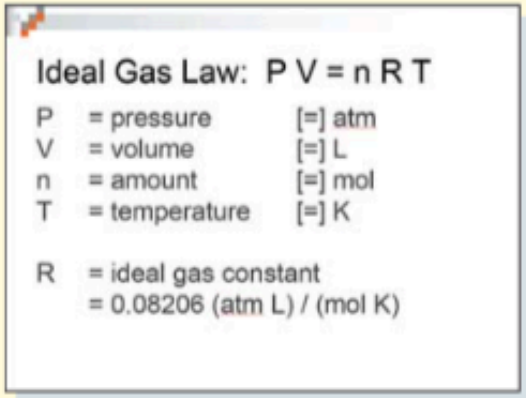
3. SAMPLE PRESENTATIONS

Example 5.2 - Sample Student Presentation 2

Improved Presentation:



1



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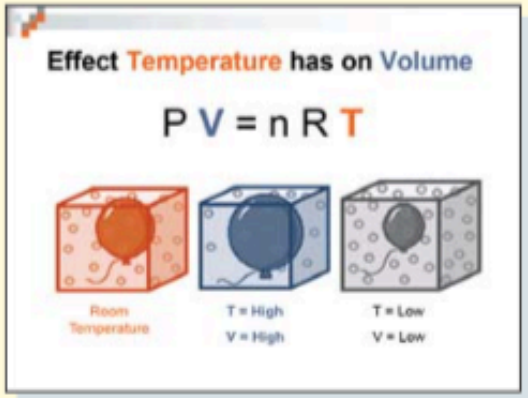

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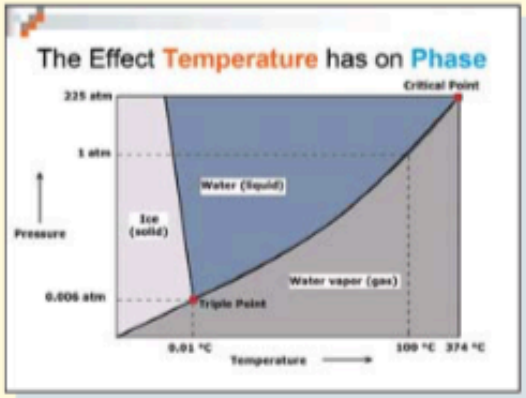

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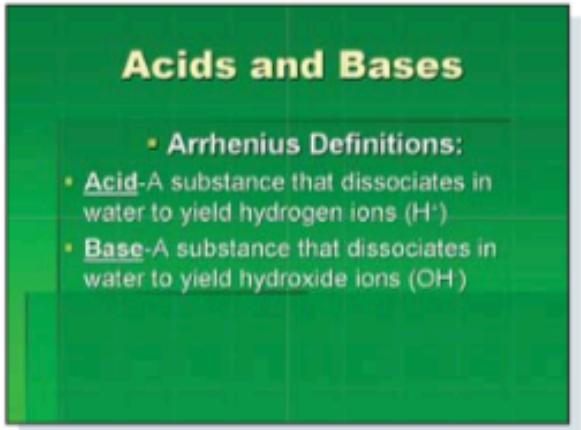
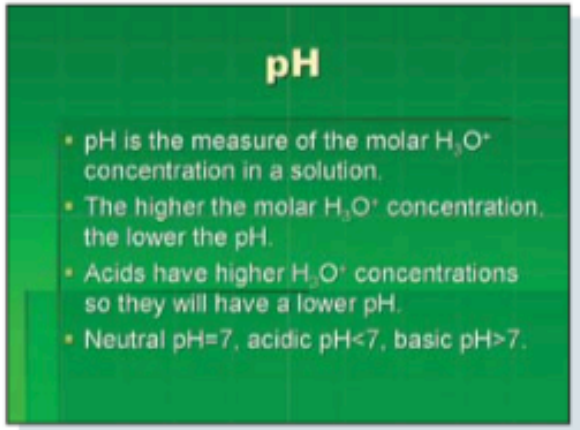
3. SAMPLE PRESENTATIONS

Example 5.3 - Sample Student Presentation 3



1



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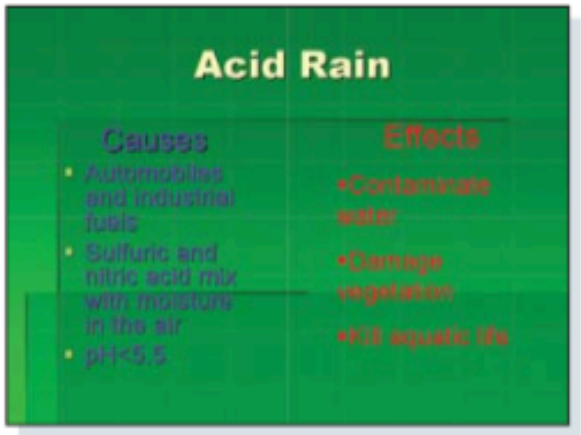

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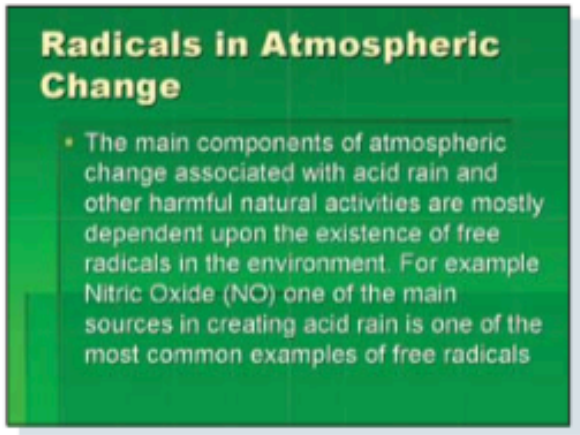

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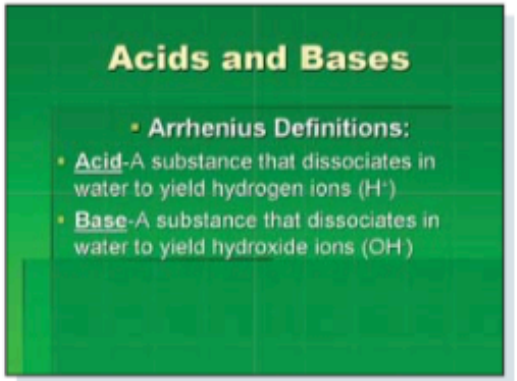
3. SAMPLE PRESENTATIONS

Example 5.3 - Sample Student Presentation 3

Original Presentation: Critique

- Green backgrounds with white text do not project well; blue and red text is especially hard to read.
- Slides 2 and 4 have too many words; should use bullets, not sentences.
- No graphics; some pictures of acid rain damage would be helpful.



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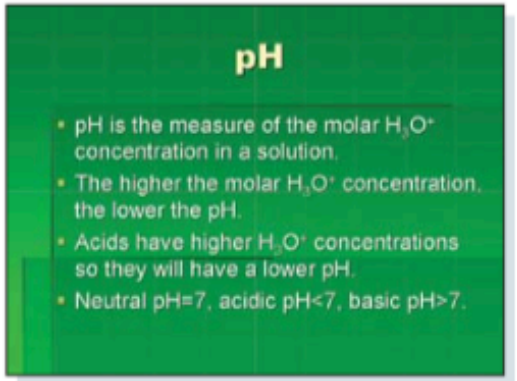

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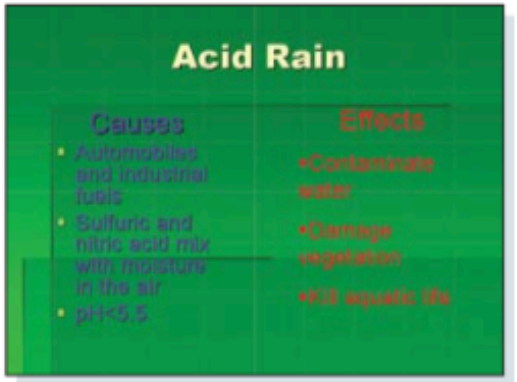

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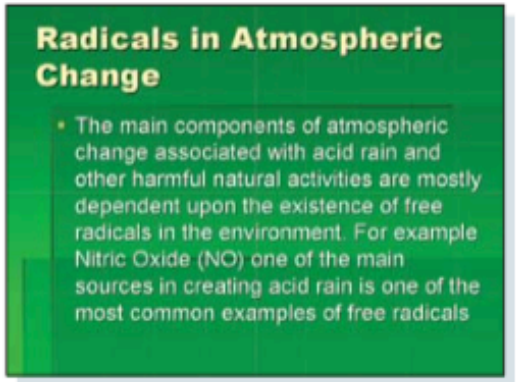

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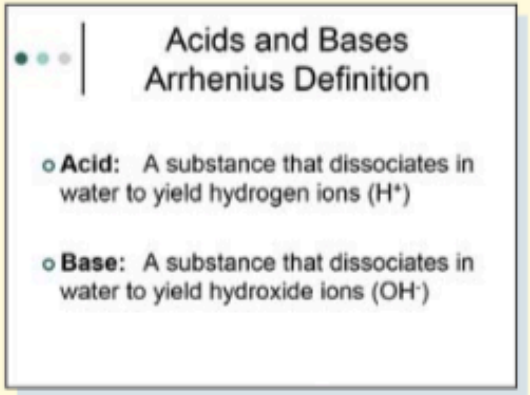
3. SAMPLE PRESENTATIONS

Example 5.3 - Sample Student Presentation 3

Improved Presentation:



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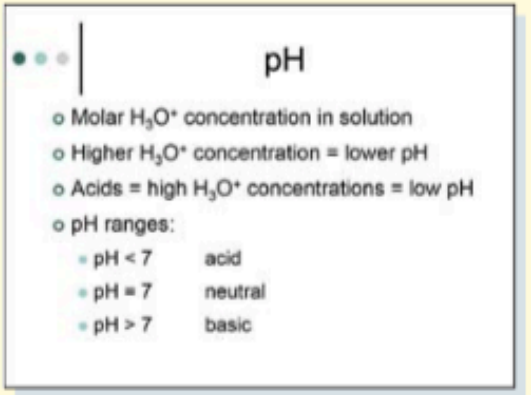

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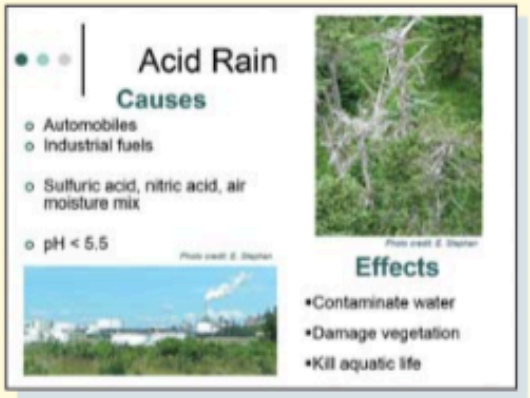

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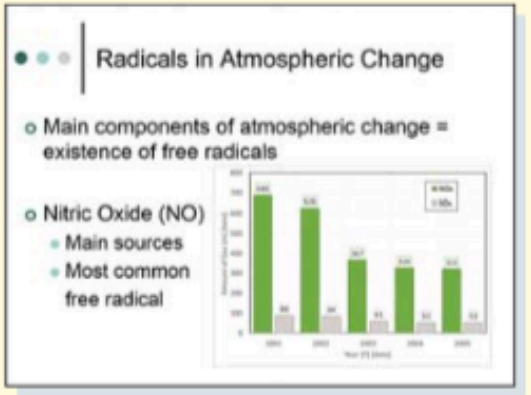

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3. SAMPLE PRESENTATIONS

Making the Presentation

Oral presentations present several challenges for effective communication:

- Presenters who simply reads the contents of the slides with no embellishment?
- Presenters who seems to be terrified of the audience, cowering in fear and trying to disappear into the wall
- Presenters have tried desperately to read the contents of a slide containing hundreds of words in a minuscule font?

3. SAMPLE PRESENTATIONS

Making the Presentation - Presentation Dos

- When delivering a presentation, do:
    - Relax!
    - Speak slowly and clearly, making good eye contact.
    - When your hands are not busy, drop them to your sides.
    - Rehearse your presentation *out loud* multiple times. If possible, have a friend critique.
    - Arrive early enough
        - to make sure that all technology is present and working,
        - resolve any problems you may discover.

3. SAMPLE PRESENTATIONS

Making the Presentation - Presentation Don'ts

- When When delivering a presentation, do not:
  - Lean on your surroundings, turn your back to the audience, or cover your mouth while speaking.
  - Read your presentation from a prepared text.
  - Tell inappropriate jokes.

3. SAMPLE PRESENTATIONS

Making the Presentation - Presentation Don'ts

- When When delivering a presentation, do not:
  - Stammer, overuse the pronoun "I," or repeatedly say "um" or "uh."
    - Do not be afraid of a little silence if you need to glance at notes or collect your thoughts.
  - Chew gum, remove coins from pockets, crack your knuckles, etc.
  - Shuffle your feet or slouch; move repetitively, for example, pace back and forth or sway.
  - Play with your notes.


ZUCCHERO
Coffee Break

4. BASIC TECHNICAL WRITING SKILLS

Introduction

- Technical documents you produce will often be far more important to your company and your career than a live presentation of the same information.
    - Utilize basic principles for technical writing
    - Recognize the importance of editing and revising in writing
    - Use proper references in technical document

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

Effective technical writing requires its own set of guidelines.

- **Be clear**
    - use precise language.
    - Keep wording efficient without losing meaning.
    - Do not exaggerate
- Ensure that the finished copy logically and smoothly **flows** toward a conclusion.
    - Beware of “choppiness” or discontinuity.
    - Avoid extremely long sentences because they may confuse the reader.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- If possible, use 12 - point font size and 1.2 line spacing.
- **Generally, prefer past tense verbs.**
    - Keep verb tenses in agreement within a paragraph.
- **Define any terms** that might be unfamiliar to the reader,
    - including acronyms and
    - symbols within equations.
- Present facts or inferences rather than personal feelings.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Number and caption all tables, figures, and appendices.**
  - Refer to each from within the body of the text,
  - numbering them in order of appearance within the text.
  - Tables are numbered and captioned *above* the table.
  - Figures are numbered and captioned *below* the figure.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Number and caption all tables, figures, and appendices.**
    - Tables are numbered and captioned *above* the table.

Table 5.1 - Example of a Properly Formatted Table

Current (I) [A]	2	6	10	14	16
Energy of Inductor #1 (E1) [J]	0.002	0.016	0.050	0.095	0.125
Energy of Inductor #2 (E2) [J]	0.010	0.085	0.250	0.510	0.675
Energy of Inductor #3 (E3) [J]	0.005	0.045	0.125	0.250	0.310

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Number and caption all tables, figures, and appendices.**
  - Figures are numbered and captioned *below* the figure.

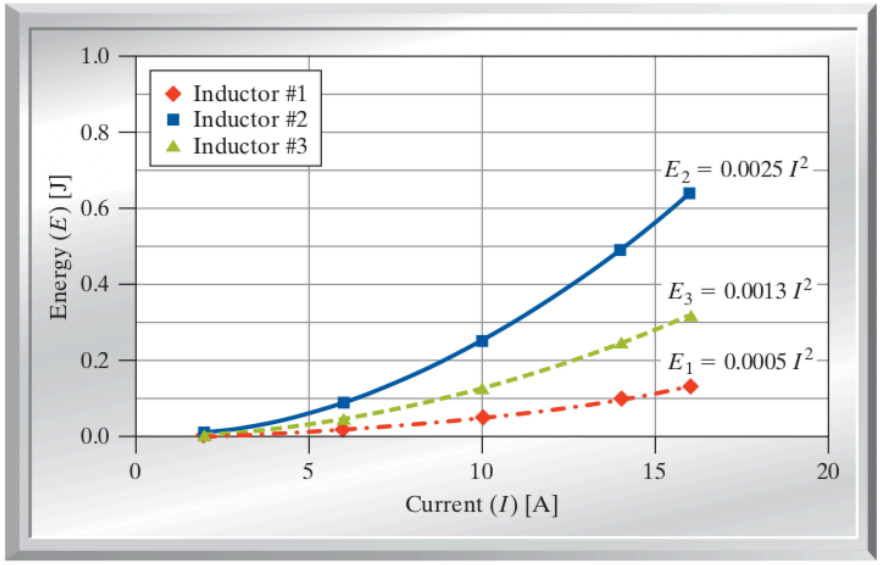

Fig. 5.1 - Example of a Properly Formatted Figure

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- Proofread and edit several times.
    - **Remember to include** headings, figures, tables, captions, and references.
    - Do not assume that the spell check on the computer will catch everything!
    - It will not distinguish between such words as *whether* and *weather*, or *was* and *as*.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Read it twice:** once for technical content and once for flow.
    - As you proofread, look for and *remove* the following:
        - unnecessary words;
        - sentences that do not add to the message;
        - superfluous paragraphs.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Read it twice:** once for technical content and once for flow.
    - Do one proofreading aloud.
        - When you encounter commas, semicolons, colons, or periods, pause.
        - Read a comma as a brief pause.
        - Read a colon or semicolon as a longer pause.
        - Read a period as a complete stop before the next sentence. Read what is actually written, not what you "think" it should say.
        - If the text sounds stilted or blurred when read, you probably need to reconsider your use of these punctuation marks.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Read it twice:** once for technical content and once for flow.
    - If possible, have someone not associated with the project
        - (a roommate, a friend, or a mentor)
    - read it, and ask that person for suggestions.

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Spell out a number that starts a sentence.**
    - If the number is large (e.g., a date), reword the sentence.
    - 23 points were outliers. (Unacceptable)
    - Twenty-three points were outliers. (OK)

- **Keep the leading zero with a decimal.**
    - The bridge cost .23 naira per gram. (Unacceptable)
    - The bridge cost ₦0.23 per gram. (OK)

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **For long numbers, do not spell out.**
    - The average was one thousand, two hundred fifty-five grams. (Unacceptable)
    - The average was 1,255 grams. (OK)

- **Use the Naira ₦ symbol.**
    - The bridge cost fourty million Naira. (Unacceptable)
    - The bridge cost **₦**40,000,000. (OK)

4. BASIC TECHNICAL WRITING SKILLS

General Guidelines

- **Watch for significant figures.**
    - Keep it reasonable!
    - The bolt is 2.5029 inches long. (Unacceptable)
    - The bolt is 2.5 inches long. (OK)

4. BASIC TECHNICAL WRITING SKILLS

How Important are Communication Skills at your Job?

WISE WORDS: HOW IMPORTANT ARE COMMUNICATION SKILLS AT YOUR JOB?

Projects are successful when the people who work together on them are able to communicate clearly with each other and work together to achieve a common goal. Misunderstanding and miscommunication leads to delays, poor quality, and frustration.

A. Hu, EE

As an engineer you communicate at all levels from the least senior production employee on the factory floor to the president of the company. Tailoring the message to the audience is the difference in acceptance and rejection.

J. Huggins, ME

Writing clear and concise specifications for construction can make the difference between an under-budget, on-time project and an over-budget, late, and unsafe final product.

L. Johnson, CE

As a consultant, extremely. If clients can't get along with you, they won't hire you. Every job requires a proposal and an interview.

J. Meena, CE

Much of my work in my current job involves researching what is going on in the world, and then putting that information into a format that makes sense to people and helps other people draw conclusions from it. Good written communication skills are essential for what I do every day.

M. Peterson, EE

All the social skills are *extremely* important because of the different functions and technical levels that I interface with.

E. Styles, EE

Communication—along with teamwork—really separates bad engineers from good ones. Someone could have the best idea in the world, but if he isn't able to describe the invention or provide reasons as to why it should be developed, the idea is useless. Plus, engineers are trained to be rational and thus perfect for managerial positions. If you have good communication skills, one can easily expect you to climb quickly up the corporate ladder.

A. Thompson, EE

4. BASIC TECHNICAL WRITING SKILLS

Proper Use of References

- The Internet to find information.
    - an excellent source for for preliminary research
    - there are definite risks associated with using online sources
- When making presentations or writing reports
    - it is important to verify the veracity of any sources you consult.
    - guidelines will to avoid egregious errors

4. BASIC TECHNICAL WRITING SKILLS

Proper Use of References

The ABCs of evaluating information online offer a useful start.

- **Authority:**
    - Is it clear who is responsible for the site?
    - What are the author's credentials?
    - Is the author an expert in the field?
    - Is it a .com or .gov or .edu site?

4. BASIC TECHNICAL WRITING SKILLS

Proper Use of References

- **Bias:**
  - What is the purpose of the article?
  - Is it free of obvious bias?
  - Is the author presenting an objective view of the subject matter?

- **Currency:**
  - When was the information created or last updated?

4. BASIC TECHNICAL WRITING SKILLS

Proper Use of References

The student can also go further than that:

- **Use sources that have been reviewed by experts.**
    - Instead of searching for hours trying to find websites that meet stringent requirements,
    - try using library sources to identify good quality sources that have already been through a review process.
- **Secure a peer review:**
    - An expert in the appropriate field evaluates something proposed (as for research or publication)
    - Academic Search Premier and Expanded Academic ASAP - multi-subject databases

4. BASIC TECHNICAL WRITING SKILLS

Proper Use of References

- **Compare the information found in your article or website with content from other websites, or from reviewed sources.**
    - Comparing sources can also alert you to controversial information or bias that will need further study
    - Are facts from one website the same as those of another?
    - How about depth of coverage?
    - Maybe one site has better-quality information.
    - Does the site have photos or other unique features that make it a good choice?
    - Or perhaps a journal article from a library database is a better source.
    - Until you compare several sources, you will not know what you are missing!

4. BASIC TECHNICAL WRITING SKILLS

Proper Use of References

- **Corroborate the information.**
  - Verify the facts from your source—regardless of where you found it—against one or more different sources.
  - Do not take the word of one person or organization.
  - A simple rule might be: "Do not use information unless you have corroborated it".
  - Corroboration with varied and reviewed sources increases the probability of success.


ZUCCHERO
Coffee Break

5. COMMON TECHNICAL FORMATS

Introduction

Technical communications can take on a variety of formats.

- e-mail
- memos
- short technical reports
- technical posters
- etc

5. COMMON TECHNICAL FORMATS

E-mail

- Rules they use for instant messaging (IM), Twitter, etc. does not apply to e-mail
- Using e-mail in a professional context (including e-mail to professors!) requires more formal rules
- You need to write e-mail that is clear, concise, and appropriate for the recipient.

5. COMMON TECHNICAL FORMATS

E-mail

- After you have composed your e-mail, ask yourself if you would mind
    - the Vice Chancellor of the university,
    - the CEO of your company
    - prospective employer
    - your parents
    - your lecturer
- reading it?
- If the answer to any of these is no, then you probably should reword it.

5. COMMON TECHNICAL FORMATS

E-mail

Rules E-mail Etiquette

1. Be sure to correctly address the recipient.
    - If you are unsure of a person's proper title (Dr., Mrs., Prof.), look it up!
2. Use an appropriate subject line.
    - Avoid silly subjects (Hey—Read this!) or
    - omitting the subject line –
    - this may cause the e-mail to end up in the Junk Mail folder.

5. COMMON TECHNICAL FORMATS

E-mail

3. Sign your *full* name and include contact information
    - for e-mail, phone, or mailing address if appropriate.
    - When sending e-mail about a class, include
        - student number, course code, day and time, etc. is often helpful.
4. Change your sending name to your full name
    - such as Elizabeth Ahmed or
    - an appropriate nickname - Liz Ahmed.
    - Do not leave your account as Student or the computer default setting (such as Noname Ahmed).

5. COMMON TECHNICAL FORMATS

E-mail

5. Keep it brief.
    - Do not use one continuous paragraph - make it easy to read.

6. If you expect a response,
    - be sure that action items are clearly defined.

7. Use correct capitalisation and punctuation.
    - Spelling does count – even in e-mail!
    - Avoid IM speak (e.g., LOL, IMHO, IIRC).

5. COMMON TECHNICAL FORMATS

E-mail

8. Avoid putting anything in e-mail you would not say in person.
    - Do not use e-mail to “vent”
    - Do not write anything that can be easily misinterpreted by the reader.
9. To avoid sending an e-mail before you have a chance to check over your work,
    - fill in the To: and CC: lines last.

5. COMMON TECHNICAL FORMATS

E-mail

10. When waiting for a reply, allow a grace period of 48 to 72 hours.
    - If you have not received a reply after 48 hours and a deadline is approaching,
        - you can resend your message, inquiring politely if it was received.
    - Items do sometimes get lost in cyber- space!
    - If the matter is critical
        - try the phone or
        - request a face-to-face meeting if the first contact does not elicit a response.

5. COMMON TECHNICAL FORMATS

E-mail

- Keep two e-mail accounts:
    - one for professional use, and
    - the other for personal use.
- Choose e-mail names carefully.
- Some of our favourites emails are as follows:

5. COMMON TECHNICAL FORMATS

E-mail - Sample email

Sample E-mail

To...	R. Swarthmore, Ph.D. [swart@reactorsealsrus.com]
cc...	C. Ohland [carson@reactorsealsrus.com];
	K. Stephan [katie@reactorsealsrus.com]
Subject:	Leaky gel reactor seal

Dr. Swarthmore:

The gel reactor seals in B4L3 are leaking and causing production losses (over 200K for FY 2001). The Materials Engineering Lab was asked to test other seal materials. Laboratory tests identified six material couples that produced better wear resistance than the current seal. A prototype seal was made with a new material, self-mated cemented carbide, but the carbide on the seal cracked during fabrication.

The purpose of this e-mail is to request an additional $40,000 and four months' project time to fabricate and test another new seal configuration.

Your approval of this program before Friday noon will allow us to proceed with the project as quickly as possible without any delay. If you have further questions or would like more information, please contact me.

Sincerely,
J. Brock
Design Team Manager, Reactor Seals R Us
(123) 456-7890 x 1234
jbrock@reactorsealsrus.com

5. COMMON TECHNICAL FORMATS

E-mail Examples

I won't go into detail but my partner didn't really give me enough heads up to let me know he needed to do the analysis. Approximately 30 minutes before 5 when it was due so I am going to submit an answer for the final question into the course management system where we would turn in the workbook. Weather you choose to accept it or not is up to you.

Better solution:

I have been having a difficult time communicating with my partner (insert name), and we had some confusion about who was responsible for submitting the analysis portion of Project 2. Just before 5 pm, when the project was due, he informed me that the analysis was not complete. I will finish the project analysis tonight to include the additional questions I did not submit previously, and bring you the completed document in the morning at 10 am during your office hours. I would appreciate the opportunity to discuss this situation with you further at that time.

5. COMMON TECHNICAL FORMATS

E-mail Examples

I dont know what going on with the computer but I have been trying to upload the assignement for an hour and it will not work. I have to drive to (insert state) tonight so I wont be able to fix this problem later. I can not files on monday so you can see when they were last saved and show you them then. I really need this one point. Please consider this.

Better solution:

I have been trying to upload the assignment since 6 pm, and will continue to try; however, I wanted to email you this assignment since the deadline of 10 pm is approaching. The system will let me browse and select a document, but will not do anything when I hit submit. I have tried to use a wired connection instead of wireless, with no luck. Do you have any suggestions for fixing this problem? Thank you in advance for your assistance.

5. COMMON TECHNICAL FORMATS

E-mail Examples

I've been throwing up all morning and did not make it to class. i did not think it would be a good idea to possibly get anyone else sick or disrupt class with me running out. I hope you can excuse my absence if I'm not there. i was just curious if there was anything else i missed in class

Better solution:

I am sorry, but I will be unable to attend class today due to illness. I understand this absence will be unexcused, per the course syllabus, since I am not going to seek medical attention and will use this as one of my three allowed unexcused absences. I will check the course management system and my classmates to determine what I missed today. If I have any further questions, I will see you during your office hours tomorrow. I expect to return to the next class period.

5. COMMON TECHNICAL FORMATS

Memos

Memo (One Page Limit)

- The template for one-page memo is outlined below
- Your professor may ask you to adhere to this format, or may suggest a different one.
- You should use a 12 - point font such as Times New Roman or Verdana, with 1 to 1.2 line spacing.
- Margins should be set to 1 inch all around.
- Be sure to use correct spelling and grammar.
- Include the headings given here, in bold.
- Be sure to keep this memo to a ONE PAGE limit.

5. COMMON TECHNICAL FORMATS

Memos

The following template outlined below and provided online is for a one-page memo. Your professor may ask you to adhere to this format, or may suggest a different one.

To: Dr. Engineering
From: Ima Tiger, Section 000 (IMT@school.edu)
Subject: Memo Guidelines
Date: May 21, 2014

Introduction: The first three or four sentences should explain the purpose behind the memo. You should attempt to explain what you were asked to do, what questions you are trying to solve, what process you are attempting to determine, etc.

Results: Place any experimental results, in tabular and/or graphical format, here. As space is limited, this normally only includes two items: two tables, two figures, or one table and one figure. Be sure that each is clear enough to stand alone, with one to two sentences of explanation. Be aware each table and figure should illustrate a *different* idea. Include a table caption at the top of each table, and a figure caption at the bottom of each figure. The caption should include a number and a word description. When a figure is used within a document, a title is not necessary on the graph and is replaced by the caption. The two items should be pasted side by side using the **Paste Special > JPEG** command or similar picture format command (PNG, Bitmap) and then sized appropriately.

Discussion: In this section, discuss how you obtained your data, the meaning of any trends observed, and significance of your results. Refer to the tables or figures shown in results by name (Table 1 or Figure 1). Explain any errors in your data (if possible) and how your data differs from theory. If you are deciding among several alternatives, in addition to justifying your final selection be sure to explain why you did NOT choose the other options.

References: List any sources you use here. You may use a new page for references if necessary. Any reference format is acceptable; Modern Language Association (MLA) citation style is preferred.

Remember: This document has a ONE PAGE limit!

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5. COMMON TECHNICAL FORMATS

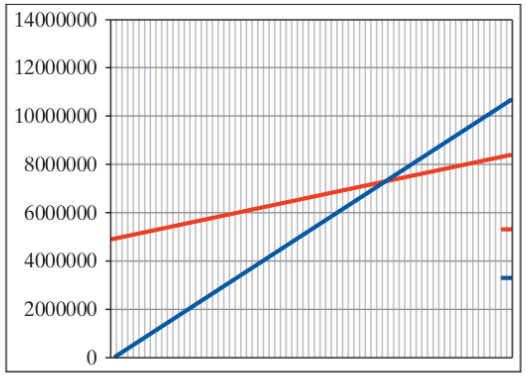
Memos - Badly Written Student Memo

To: Dr. Engineering
From: Ima Student
Subject: Memo
Date: April 1, 2014

Introduction: We are given the job to analyze the cost of upgrade a machine line, which produces widgets. We were given three companies to choose from, to figure out witch would be the best for the cost and its production. Just by graphing the variables would allow us to find our answer.

Results:

	Klein Teil	
Varible Cost	0.95	
Fixed Cost	*5.00E+06*	
Material Cost	*0.75*	
Energy Cost	*0.15*	
Labor Cost	*0.05*	
Selling Price	*3*	
apacity per da	*6500*	
antity Produc	*ein Teil Total Co*	*Revenue*
0.00E+00	*5.00E+06*	*0.00E+00*



Discussion: We got the data by taking all variables from the information provided, then graphing the results together. This allowed us to see which machine line would provide the better outcome for the situation at hand. Considering the cost of the machine, material, labor, and energy into consideration with what would produce the quantity and quality product we're striving for. Figure 1 display all three solutions': total cost, revenue for us, and our breakeven point to ensure us of our choice. From observation of the graph we see that the Klein Teil machine is better. Its breakeven is at $2,400,000 and the profit is twice as much.

Summary: So to answer the question, Klein Teil would be our best option. The results yielded that the Klein Teil machine would give us the most quality for its price, a better production rate, and more money in return. From this research I hope you choose to take the Klein Teil machine.

5. COMMON TECHNICAL FORMATS

Memos - Badly Written Student Memo

Comments on this memo:

- There are so many problems with this submission that we address only the major problems.
    - The subject line simply informs us that this is a memo.
    - The introduction tells us very little about what the memo will address.
    - The same data is presented in both the graph and the table.
        - The formatting of the table is very poor;
        - the formatting of the graph is worse.

5. COMMON TECHNICAL FORMATS

Memos - Badly Written Student Memo

Comments on this memo:

- The discussion does not explain how the data was analysed,
    - the justification of the final recommendation is essentially nonexistent.
- the summary says almost nothing.
- How many more problems can you find in this sample memo?

5. COMMON TECHNICAL FORMATS

Short Report

The Short Report (Two to Four Pages)

- You should use a 10-point font such as Times New Roman or Verdana, with 1 to 1.5 line spacing
- Margins should be set to 1 inch all around
- Be sure to use correct spelling and grammar
- Include the headings given here, in bold.

5. COMMON TECHNICAL FORMATS

Short Report - Outline

The typical Short Report should have the following outline:

1. Introduction
2. Procedure
3. Results
4. Discussion
5. Summary
6. References

5. COMMON TECHNICAL FORMATS

Short Report - Outline

The typical Short Report should have the following outline:

1. **Introduction**

    - Type the introduction here.
    - This should be four or five sentences.
    - What is the problem that will be addressed in this memo?

5. COMMON TECHNICAL FORMATS

Short Report - Outline

2. **Procedure**

- Type the procedure here.
- This should be at most ¾ page.
- It may be in bulleted format.
- You should generalise the procedure used to include the basic steps,
    - but you do not need to include every detail.
- The reader should gain an understanding of how you collected your data and performed your analysis.

5. COMMON TECHNICAL FORMATS

Short Report - Outline

3. **Results**

- Insert the results here, but do not discuss them or draw any conclusions.
- This may include a maximum of three illustrations,
    - in a combination of figures and tables.
- Be sure that each is clear enough to stand alone,
    - with one or two sentences of explanation.
- Include a table caption at the top of the table,
    - and a figure caption at the bottom of the figure.
- The caption should include a number and a word description.

5. COMMON TECHNICAL FORMATS

Short Report - Outline

- Be aware tables and figures should illustrate *different* ideas.
- Do *not* include large tables of raw data or *every* graph generated.
- This section should be a *sample* of those items, used to illustrate the points of your discussion.

4. **Discussion**

- Explain your results here.
- This can be up to a maximum of one page.
- Refer to the table and figure shown in results by name (Table 1 . . .).
- Be sure to include the items specifically requested in the original project description.

5. COMMON TECHNICAL FORMATS

Memos - Badly Written Student Memo

5. **Summary**
    - What is the final conclusion?
    - This should be four to five sentences long, and
    - answer the initial questions asked in the introduction and
    - summarise any important findings.
6. **References**
    - List any sources you use here.
    - Any reference format is acceptable
    - For example - IEEE format, SPE format, etc

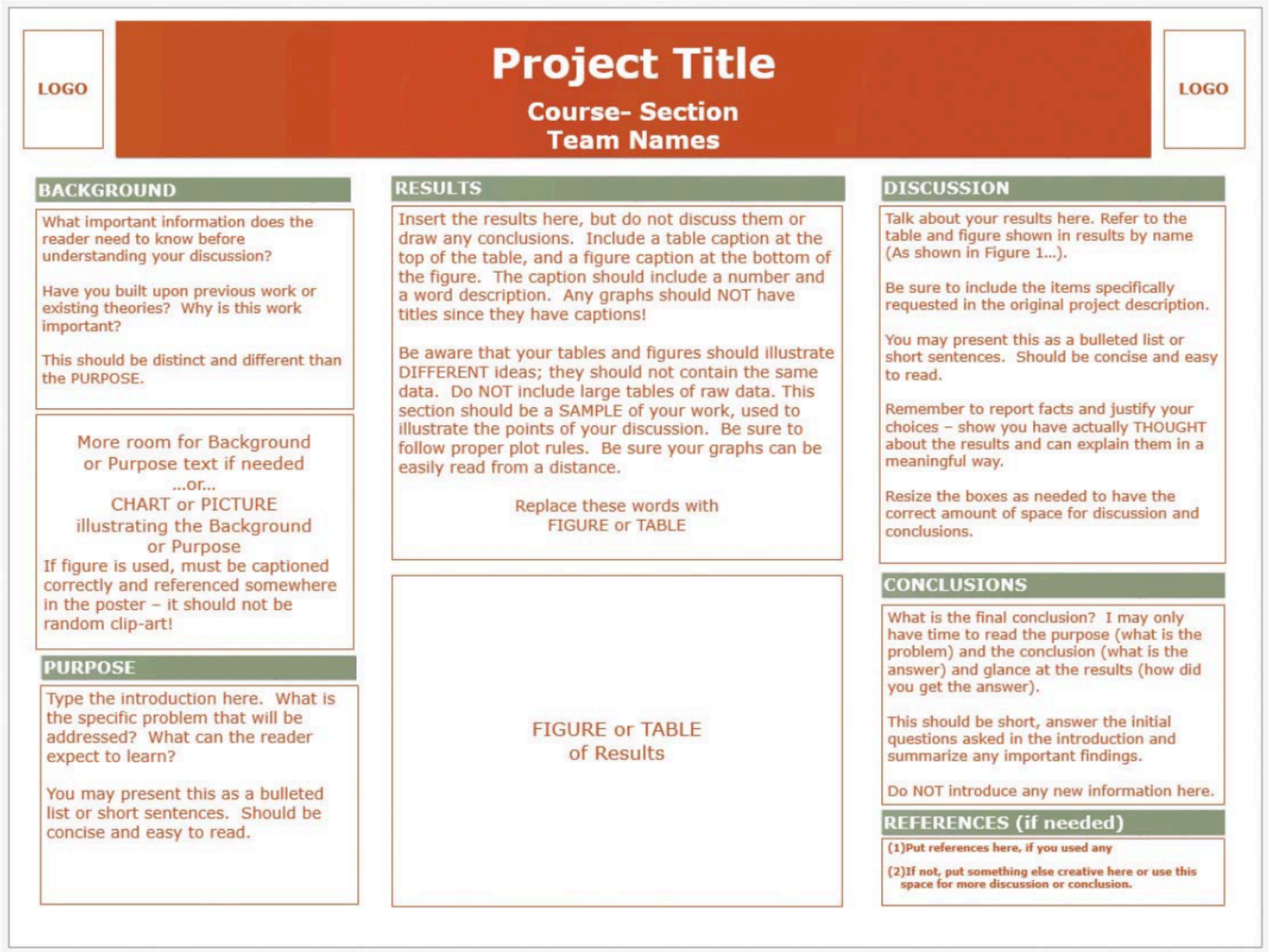
5. COMMON TECHNICAL FORMATS

Poster Presentation

- The following template is for posters.
- Your professor may ask you to follow these guidelines or provide a somewhat modified version.
- The template provided online is a PowerPoint format, but is meant to be printed.
- The default is set to 81⁄2 * 11 printing, which will allow you to submit this to your instructor without the need for a plotter.
- This could easily be changed, however, and this template be used to create a large poster.

5. COMMON TECHNICAL FORMATS

Poster Presentation




ZUCCHERO
Coffee Break

ANY QUESTION?


Thank You!

NEXT TOPIC

IS

PROBLEM SOLVING TECHNIQUES