English for Engineers- II

(Common for I MS and I B.Tech Courses)

Course Code: ENG102

Compiled and prepared by

English Division

School of Social Sciences and Languages (SSL)

VIT

UNIVERSITY

(Estd. u/s 3 of UGC Act 1956)

SYLLABUS

English for Engineers- II

(Common for I MS and I B.Tech Courses)

Theory

Course Code ENG102	Course Title English for Engineers – II	L T P C	2	0	2	3
Version No.	2					
Course Pre-requisites	ENG101					
Objectives	Students : • Can write and prepare the necessary technical documents. • Can face interview with confidence. • Will be a better performer professionally.					
Expected Outcome	• Tune up writing skills and prepare technical documents without errors. • Enhance the students with strong writing and presentation skills.					

Course Description	**Theory**
Unit No. 1	**6 hrs**
Profiling readers – Context of Use Revising and editing - Error detection (grammatical and vocabulary) Drafts of Abstract and Executive Summary	
Unit No. 2	**6 hrs**
Revising and editing –Proof reading symbols Writing Instructions Writing Memos.	
Unit No. 3	**6 hrs**
Preparing Questionnaires Writing Statements of Purpose – Definitions, format and Sample Technical - Report writing	
Unit No. 4	**6 hrs**
Technical- Writing a Proposal Graphic information/ Transcoding (Use of graphs, tables, charts)	

Meeting – Agenda, Minutes	
Unit No. 5	**6 hrs**
Resume (Archival and Functional) Writing effective Applications (Emphasizing Education and Emphasizing Work Experience) Thank You Letter and apology letters (after interviews or refusing a job offer)	
Text Books Compiled and prepared by the English Division, SSL, VIT University	
References 1. Technical Communication Today –Richard Johnson and Sheehan 2. Porter, Patricia A., and Margaret Grant. *Communicating Effectively in English: Oral Communication for Non-Native Speakers*. 2nd ed. Belmont, CA: Wadsworth, 1992. ISBN: 9780534172688. 3. Alley, Michael. *The Craft of Scientific Presentations: Critical Steps to Succeed and Critical Errors to Avoid*. New York, NY: Springer, 2007. ISBN: 9780387955551. 4. Writing Resumes-Kilmet, Stephen. "The Resume," and "The Computerized Resume." In *Writing for Design Professionals*. New York, NY: W.W. Norton, 2006, pp. 127-129. ISBN: 0393731855. 5. Writing Cover Letters-Kilmet, Stephen. "Cover Letter," and "Enclosures and Attachments." In *Writing for Design Professionals*. New York, NY: W.W. Norton, 2006, pp. 128-129. ISBN: 0393731855. 6. Writing a Proposal "Standard Proposal for Funding." in *Writing in the Disciplines*. Fort Worth, TX: Harcourt Brace College Publisher, 1995. ISBN: 0155025384. 7. http://www.job-interview.net/ 8. http://www.interviewmastery.com/	
Mode of Evaluation	Assignments/Seminars/CAT/Term-end
Recommended by the Board of Studies on	14.05.2012
Date of Approval by the Academic Council	18.05.2012

Lab

Course Code ENG102	Course Title English for Engineers – 102	L T P C	-	-	2	1
Version No.	2					
Course Pre-requisites	Clearing the EPT					

Course Description	**Lab**
Unit No. 1	**3 hrs**
Group Discussions - Process, Skills, Guidelines, Evaluation	
Unit No. 2	**3 hrs**
Oral Presentation Skills – Planning, Preparing, Organizing, Presenting	
Unit No. 3	**3 hrs**
Starting A Career –Making Goals And Setting Plans	
Unit No. 4	**3 hrs**
Interviews – Identifying Career Options, Preparing For An Interview , Facing An Interview	

Text Books

Compiled and prepared by the English Division, SSL, VIT University

References

1. Technical Communication Today –Richard Johnson and Sheehan
2. Porter, Patricia A., and Margaret Grant. *Communicating Effectively in English: Oral Communication for Non-Native Speakers*. 2nd ed. Belmont, CA: Wadsworth, 1992. ISBN: 9780534172688.
3. Alley, Michael. *The Craft of Scientific Presentations: Critical Steps to Succeed and Critical Errors to Avoid*. New York, NY: Springer, 2007. ISBN: 9780387955551.
4. Writing Resumes-Kilmet, Stephen. "The Resume," and "The Computerized Resume." In *Writing for Design Professionals*. New York, NY: W.W. Norton, 2006, pp. 127-129. ISBN: 0393731855.
5. Writing Cover Letters-Kilmet, Stephen. "Cover Letter," and "Enclosures and Attachments." In *Writing for Design Professionals*. New York, NY: W.W. Norton, 2006, pp. 128-129. ISBN: 0393731855.
6. Writing a Proposal "Standard Proposal for Funding." In *Writing in the Disciplines*. Fort Worth, TX: Harcourt Brace College Publisher, 1995. ISBN: 0155025384.
7. http://www.job-interview.net/
8. http://www.interviewmastery.com/

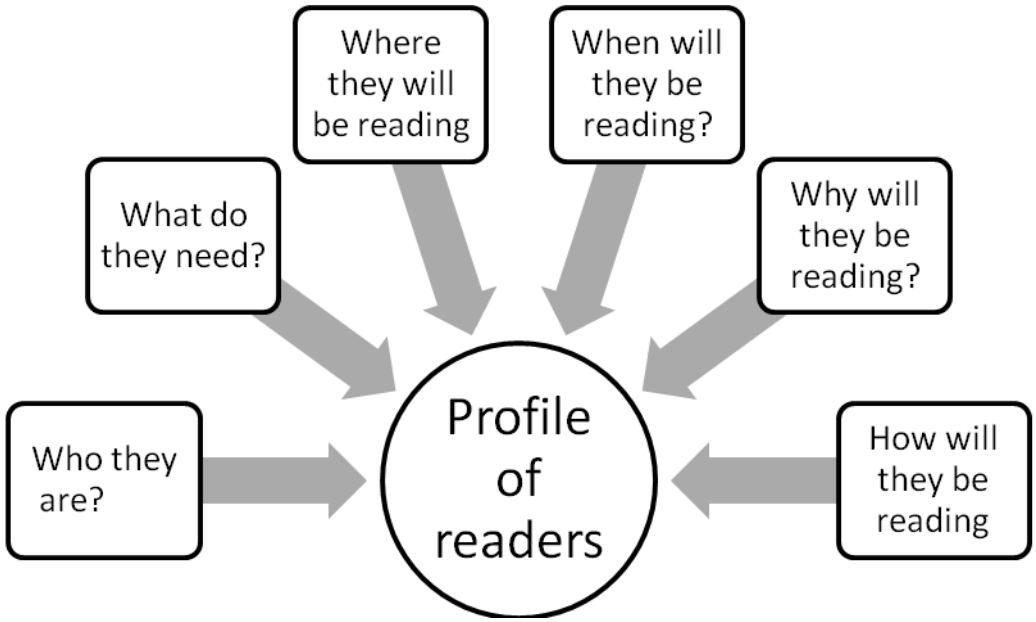
Mode of Evaluation	Assignments/Quizzes/Seminars/CAT/Term-end
Recommended by the Board of Studies on	14.05.2012
Date of Approval by the Academic Council	18.05.2012

CONTENTS

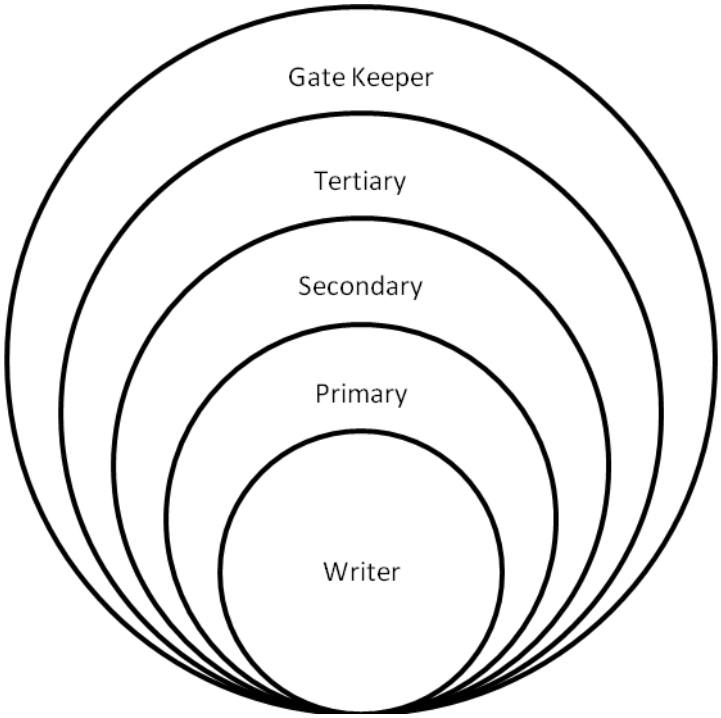
1

PROFILING READERS

In Technical Communication documents are designed to suit the specific needs of the readers. For this reason you should begin with an analysis of those who may be interested in your document.



It is essential to identify your readers as it will help you identify various people who might look over your text. For this purpose you can use a writer- centered chart and start by filling the names and titles of the primary, secondary, tertiary and gatekeeper readers who will and might look over your work.



Hence based on the requirements the writer will prepare a chart that would analyze the needs, values and the attitudes of a possible reader. This will help to understand the reader better and at the same time the chart will help in channelizing the writing.

READER ANALYSIS CHART

Readers	Needs	Values	Attitudes
Primary			
Secondary			
Tertiary			
Gate Keepers			

Needs: Will depend on what the readers need to make a decision or take an action.

Values: What they value most. It could depend on efficiency and constancy, accuracy, environmental or social concerns.

Attitudes: What are the reader's attitudes towards you, your organization, the subject of your document.

Will they be upset, wary, positive, hopeful, skeptical, concerned or cheerful about what your telling them through the document.

Profiling the readers has its own advantages as you would know the exact information you would have to incorporate into your text. It gives you knowledge of the choice of terms, concepts, tables and charts you would incorporate into the text. As you draft your document the analysis of your reader will help you

- Make a decision on what you would have to include in your document.
- highlight information that is necessary
- develop you writing style based the analysis of the readers
- design the documents for the places it will be used

READER ANALYSIS CHART

	Needs	Values	Attitudes
Primary • Teacher	• A good assignment • Team work	• A good research on the topic and sufficient information • Originality	• Impartial and open minded assessment
Secondary • Friends • Relatives • Other VITians	• A good effort • Pride • Consideration	• Innovation • Safety of the project • A good developmental project	• Interested • Appreciative • Interested

Tertiary • Interested users on the internet • Bloggers • Researchers	• Key points on the project • An informative approach • Detailed description of the project	A brief description Some good resources Latest technological advancement in the field	• Quest for knowledge • Open minded • Inquisitive
Gate Keepers • Future employer	• Evidence of our achievements	• Technical skills related to latest advancements .	• Judgmental

For instance if you add blogging or reviewing in your resume the people in your interview panel may look up your work and be judgmental about it. If you have predicted this earlier when you analyze your readers it would help you prepare a better document that might persuade your interviewer consider your application even before they interview you.

EXAMPLE:

1. **Implementation of Augmented Reality via Head-Mounted Display**

Chandni Sarda,

(Student, VIT University)

Reader Profile

READER TYPE	VALUES	ATTITUDES	EXPECTATIONS
Primary: Course Faculty	Comprehensiveness of given report; Feasibility of given idea; Validity of research and theory	Satisfaction that the report fulfills all the given criteria of time-order, space-order, causality and	Description of fictional concept as mentioned, explanation on how to implement the

		result	concept using engineering technology
Secondary: Other faculties taking the same course	Applicability to audiences; Completeness of content	Interest in knowing about the new technologies described	Detailed description of the new concept and its implementation
Tertiary: Division Leader for the Course	Applicability to audiences; Completeness of content	Interest in knowing how the new technologies are described; excitement about sending the paper to more wide reader base by publishing it	Detailed description to understand how the technology is being implemented and its future impact
Gate Keepers: College Management	Appropriateness of theories; Comprehensiveness of the report	Excitement about possible publication via the college	Comprehensive review; Originality of idea depicted

Abstract

Science fiction author Vernor Vinge, in his 2006 best-selling novel, **Rainbows End**, showed augmented reality to be dominant in the coming world. In the novel, humans are shown to interact with virtual overlays of reality most of the time. He describes an implementation of AR technology by virtual retina display and contact lenses.

While research for the same concepts hasn't been completely successful as of now, Google X has managed to implement AR with a head-mounted display system. Available soon at a reasonable cost, Google's Project Glass is a step towards making fictional worlds a reality.

Introduction

Augmented Reality is a live view of a physical, real-world environment whose elements are amplified by computer-generated sensory input such as sound, video, graphics or GPS data. It is closely related to the concept of mediated reality, where a view of reality is modified by a computer. Thus, the technology functions by enhancing one's current perception of reality.

Augmented reality differs from virtual reality.
The concept of virtual reality involves replacing the real world with a simulated one. Vastly different, augmented reality is conventionally real-time and in touch with the surrounding environmental factors. With the help of AR technologies, users can view information about their surroundings in an interactive form. Augmented reality adds graphics, sounds, haptic

feedback and smell to the natural world as it exists. Moreover, users have the option of digitally manipulating what they perceive and can perform all functions on-the-go.

Technologies used in augmented reality rendering include optical projection systems, monitors, hand held devices, and display systems such as:

- A *head-mounted display* is a display device paired to a headset such as a harness or helmet. HMDs place images of both the physical world and virtual objects over the user's field of view.

- AR displays can be rendered on devices resembling *eye glasses*. Versions include eye wear that employs cameras to intercept the real world view and re-display its augmented view through the eye pieces.

- *Contact lenses* that display AR imaging contain the elements for display embedded into the lens including integrated circuitry, LEDs and an antenna for wireless communication.

- A *virtual retinal display* is a technology in which a display is scanned directly onto the retina of a viewer's eye. The viewer sees what appears to be a conventional display floating in space in front of them.

Google X has developed a combination of head-mounted display and eye glasses to implement AR technology. Project Glass products will be able to display information in a format similar to that of a smart phone, will be a hands-free device and will be able to interact with the Internet through voice commands. That is, it will be using natural programming languages, at level above the currently being used high level languages. This project is being worked on by renowned Engineers Babak Parviz, Steve Lee and Sebastian Thrun.

About Project Glass

The prototype of the head-mounted display (HMD) is small and slim. It represents a pair of normal eye glasses. The lens is replaced by a heads-up display. The prototype has seemingly simple functionality and a minimalist appearance having an aluminium strip with 2 nose pads.

The operating system used is a high-end version of Google's Android OS.

To employ this, techniques for 3D modelling are used. Specific user interface techniques are required to produce usable AR modelling applications outdoors. New techniques are needed to support the capture and creation of outdoor 3D geometry; these are as follows: AR working planes, infinite carving planes, laser carving, laser colouring, texture map capture, and surface of revolution. These new techniques provide a set of tools that are capable of capturing and creating geometry not previously possible, such as trees, automobiles, and concave buildings. Using this interface, an autonomous user can capture 3D geometry in

Earth coordinates with the aid of their physical presence. The AR rendered 3D geometry allows the user to immediately verify the results against the physical world in real time, which is not possible using existing object capture methods.

Currently in virtual reality, a number of techniques have been developed for use in modeling applications. These applications traditionally provide tools to create objects in a virtual world, to manipulate them, and to fly around the world and perform scaling operations to work on a variety of object sizes. While techniques for action at a distance such as Spot Lights, Apertures, and Image Plane Techniques have been developed, these only perform simple manipulations on existing objects and cannot be used to create new ones due to the 2D nature of the techniques. VR systems also tend to operate within a fixed area, and so while movements of the body and head are used to control the environment, flying and scaled world techniques are also needed when the tracked area is inadequate or objects are not within direct reach. Although AR systems are similar in some ways to VR, they are unique in that they require registration of the physical and virtual worlds, and so flying around and perform scaling operations is not possible. While it is possible to reuse existing action at a distance techniques that maintain the user's position and scale, other techniques are required to perform creation of data within an AR environment. Thereby the implementation of construction at a distance takes the concept of working planes from CAD systems and extends this to the area of augmented reality.

Another technique used one that allows users to capture large outdoor ground features using a mobile augmented reality (AR) system. Traditionally, AR systems have always required 3D models from other sources. This process can be error prone and time consuming and require detailed information of the outdoors. Techniques are used that are designed to allow the capture of outdoor geometry with a mobile AR system and no prior information. By leveraging information about the user's physical presence in the world and using an AR display, data is entered and immediately the system verifies the accuracy of it in real-time. With these, an autonomous user can capture 3D geometry any time, any place, and anywhere on Earth, with user interactions that are based on hand and head gestures.

Simple AR applications require support for 3D tracking devices and head mounted displays for input/output, and a renderer with a scene graph for the graphics. However, writing complex user interfaces and modelling applications requires more complex architecture. So, a system is employed that has the following features: objects passing values using a data flow methodology, distributed processing and information sharing, libraries of reusable objects to implement high level applications, abstraction objects for trackers and other hardware, rapid prototyping of code, and architecture that does not pay performance penalties for unused features.

For traditional 2D desktop environments, many stable design methodologies, toolkits, libraries, and input devices are available. Since augmented reality is a relatively new field, the same support is not as mature for implementing applications in these areas. Some toolkits, however, do exist for the implementation of VEs, such as Alice, World Toolkit, Coterie, and VR Juggler. However, these toolkits do not focus on all the aspects required to implement a VE, leaving much to the programmer to decide. Also, low level libraries, such as

Java3D and Open Inventor, provide 3D rendering and scene graphs, but no higher level support.

The developers of Project Glass have taken this to their working advantage. The Google Glass Explorer Edition is being released prior to the consumer version. This edition will be available to I/O developers. Thus, the makers are looking for a kind of open source mechanism for their new fiction-based high-end product.

Conclusion

The product began testing in April 2012. Sergey Brin has been propagating these glasses by wearing a prototype set of glasses to public events and television shows. Later, as a demo, skydivers, abseilers, and mountain bikers wore the glasses and live streamed their point of view to a Google+ Hangout, which was also shown live at the Google I/O presentation.

The glasses will be available to the public for around the cost of current smart phones soon. The idea is first to let I/O developers handle the phone for a year or so before launching it in the consumer market. By 2013, we should be able to get an experience of what was once an impossible fictional idea.

USEFUL LINKS:

1. Avery, B., Thomas, B., and Piekarski, W. User Evaluation of See-Through Vision for Mobile Outdoor Augmented Reality. In 7th Int'l Symposium on Mixed and Augmented Reality. pp 69-72. Cambridge, UK. Sep 2008.
2. Stafford, A., Thomas, B. H., and Piekarski, W. Efficiency of Techniques for Mixed-Space Collaborative Navigation. In 7th Int'l Symposium on Mixed and Augmented Reality, pp 181-182, Cambridge, UK, Sep 2008.
3. Piekarski, W. and Thomas, B. H. Interactive Augmented Reality Techniques for Construction at a Distance of 3D Geometry. In Immersive Projection Technology / Eurographics Virtual Environments, Zurich, Switzerland, May 2003.
4. Piekarski, W. and Thomas, B. H. Bread Crumbs: A Technique for Modelling Large Outdoor Ground Features. In Int'l Symposium on Mixed and Augmented Reality, Darmstadt, Germany, Oct 2002.
5. Piekarski, W. and Thomas, B. H. Tinmith-evo5 - An Architecture for Supporting Mobile Augmented Reality Environments. In 2nd Int'l Symposium on Augmented Reality, pp 177-178, New York, NY, Oct 2001.
6. http://www.howstuffworks.com/augmented-reality.htm
7. http://www.engadget.com/2012/09/12/wsj-early-look-at-google-project-glass/
8. http://en.wikipedia.org/wiki/Project_Glass
9. Mackey W. E, Department of Computer Science, Université de Paris-Sud, ORSAY-CEDEX, FRANCE http://www.lri.fr/~mackay/pdffiles/AVI98.AugmentedReality.pdf

2. READER ANALYSIS CHART

	Needs	Values	Attitudes

Primary • Teacher	Reliable information Learning	Development Fairness	Open minded Assessment
Secondary • Friends • Neighbours	Impartial comments Social Consideration	Safety Development	Positive and hopeful Encouragement
Tertiary • Reporters • Researchers	Correct information Scientific Proof Originality of content	Scientific Development	Criticizing and scrutinizing the text at a greater depth Appreciation
Gate Keepers • Your Boss	Dedication Sincerity	Positive criticism	Support Encouragement

SCIENCE MEETS FICTION…..

Mahasweta Mitra and Siddharth Sikchi (Student VIT, University)

The realm between fiction and reality is a thin one, thread like at the most, for what is fiction today might very well be tomorrow's reality. As has been proved time and throughout the course of time, we humans have not stopped dreaming, about achieving impossible things and then bridging gaps, building bridges to our dreams. Our imagination runs loose, taking us to places we could not have fathomed let alone expected. Quite often, we don't control our thoughts at all and are shocked to see where we've reached. Great visionaries of science fiction like Jules Verne, Nostradamus, to name a few had set down their predictions and we have lived to see them becoming the truth.

Whether it was the dream that propelled the vision or just pure co incidence is a matter of debate, but what we can be sure about is the fact that we have almost always made true what we have hoped to, be it air travel, travelling underwater, space travel, search of life on other planets, the list keeps on growing.

Another notable visionary was someone whose belief in science fiction and technology took the world by storm, and stirred in a generation and the next, a desire to believe beyond doubt. The dream is not far away after all, and what better way to relay to the common public than movies. The producer, the director, the film maker, the man whose imagination left us all ogling, is none other than Steven Spielberg and his Jurassic Park.

Imagine an entire race which lived on our very own planet millions of years before the first homo-sapiens. Due to extreme natural calamities and unfavourable weather conditions this race of creatures were wiped off the face of the Earth. What if they were to come back today and live among us? It seems impossible, right? Well, someone begged to differ. Call it nature's sense of humour or whatever, the key to reviving the dinosaurs lay in a simple mosquito. A mosquito which bit a dinosaur got trapped in the sap of a redwood tree, and scientists in the present time, utilised the blood in the mosquito to extract the DNA of the dinosaurs of the times. With the help of DNA recovery techniques and gene recombination methods, they were able to produce dinosaur eggs and hence, the legend began.

It is based on the novel of the same name by Michael Crichton. It stars Sam Neill, Laura Dern, Jeff Goldblum, Richard Attenborough, Arian Richards, Joseph Mazello, Martin Ferrero and Bob Peck. The film takes place on the fictional Isla Nublar near Costa Rica in the Central American Pacific Coast, where a billionaire philanthropist and a small team of genetic scientists have created an amusement park of cloned dinosaurs.

Before Crichton's book was even published, many studios had already begun bidding to acquire the picture rights. Spielberg, with the backing of Universal Studios, acquired the rights before publication in 1990, and Crichton was hired for an additional $500,000 to adapt the novel for the screen. David Koepp wrote the final draft, which left out much of the novel's exposition and violence, and made numerous changes to the characters. Filming locations were in both Hawaii and California.

Jurassic Park is regarded as a landmark in the use of computer-generated imagery, and received positive reviews from most critics. During its release, the film grossed over $900 million worldwide, becoming the highest grossing film released up to that time.

Owing to the film's success, two sequels were made: *The Lost World: Jurassic Park* directed by Spielberg as well, which was released on May 23, 1997, and *Jurassic Park III*, directed by Joe Johnston, which was released on July 18, 2001.

The movie , for the first time in media history showed dinosaurs, which had till then only been read about in history books or seen in museums. The aura and the magnanimity exerted by these magnificent creatures captured something which no other motion picture had even dreamt of. It was this spark which propelled the movie to its enormous success, both commercially and critically. For the first time, the makers of the film were able to provide an excitement and thrill, which left the audience and critics alike, rolling in their seats and begging for more.

People like Spielberg remind us every day about how thin the lines are between fiction and reality, the two inter twined, entangled almost. They give us hope and inspire us to never stop dreaming, to never stop believing, even when everyone else does, to keep on working in the face of all difficulties, to never stop expanding the scope of our thoughts, to achieve the impossible. Every day we meet such people, who rise above these limitations, creating a world where the restrictions are few and the opportunities limitless; a world where the reality starts when our imagination ends.

2

REVISING AND EDITING

ERROR DETECTION- GRAMMAR AND VOCABULATY

INSTRUCTIONS:
In each of the following paragraphs, some of the sentences contain errors in verb tense. Write out the correct form of any verb that is used incorrectly

1. *The following paragraph contains six errors in verb tense.*
Hands Up!
Recently in Oklahoma City, Pat Roughen, a watchman, deposit 50 cents in a City Hall vending machine and reach in to get a candy bar. When the machine catch his hand, he pull out his pistol and shoot the machine twice. The second shot sever some wires, and he got his hand out.

2. *The following paragraph contains six errors in verb tense.*
The Christmas Spirit
Mr. Theodore Dunnet, of Oxford, England, run amok in his house in December of 1972. He ripped the telephone from the wall, thrown a television set and a tape-deck into the street, smash to bits a three-piece suite, kicked a dresser down the stairs, and torn the plumbing out of the bath. He offer this explanation for his behavior: "I was shock by the over-commercialization of Christmas."

3. *The following paragraph contains six errors in verb tense*
Leonardo da Vinci's *Mona Lisa* is the most famous portrait in the history of painting. Leonardo took four years to complete the painting: he begun work in 1503 and finish in 1607. Mona (or Madonna Lisa Gherardini) was from a noble family in Naples, and Leonardo may have paint her on commission from her husband. Leonardo is said to have entertain Mona Lisa with six musicians. He install a musical fountain where the water play on small glass spheres, and he give Mona a puppy and a white Persian cat to play with. Leonardo did what he could to keep Mona smiling during the long hours she sit for him. But it is not only Mona's mysterious smile that has impress anyone who has ever view the portrait: the background landscape is just as mysterious and beautiful. The portrait can be seen today in the Louvre Museum in Paris.

4. *The following paragraph contains 10 errors in verb tense.*
Hard Luck
A bank teller in Italy was jilted by his girlfriend and decide the only thing left to do was kill himself. He stolen a car with the idea of crashing it, but the car broken down. He steal another one, but it was too slow, and he barely dent a fender when he crashed the car into a tree. The police arrive and charge the man with auto theft. While being questioned, he stab himself in the chest with a dagger. Quick action by the police officers

saved the man's life. On the way to his cell, he jumped out through a third-story window. A snowdrift broken his fall. A judge suspends the man's sentence, saying, "I'm sure fate still has something in store for you."

5. *The following paragraph contains 10 errors in verb tense.*

Late Bloomers

Some very remarkable adults are known to have experience quite unremarkable childhoods. English author G.K. Chesterton, for instance, could not read until the age of eight, and he usually finish at the bottom of his class. "If we could opened your head," one of his teachers remark, "we would not find any brain but only a lump of fat." Chesterton eventually become a successful novelist. Similarly, Thomas Edison was label a "dunce" by one of his teachers, and young James Watt was called "dull and inept."

ANSWERS:

1. **Hands Up!**

   Recently in Oklahoma City, Pat Roughen, a watchman, **deposited** 50 cents in a City Hall vending machine and **reached** in to get a candy bar. When the machine **caught** his hand, he **pulled** out his pistol and **shot** the machine twice. The second shot **severed** some wires, and he got his hand out.

2. **The Christmas Spirit**

   Mr. Theodore Dunnet, of Oxford, England, **ran** amok in his house in December of 1972. He ripped the telephone from the wall, **threw** a television set and a tape-deck into the street, **smashed** to bits a three-piece suite, kicked a dresser down the stairs, and **tore** the plumbing out of the bath. He **offered** this explanation for his behavior: "I was **shocked** by the over-commercialization of Christmas."

3. **Late Bloomers**

   Some very remarkable adults are known to have **experienced** quite unremarkable childhoods. English author G.K. Chesterton, for instance, could not read until the age of eight, and he usually **finished** at the bottom of his class. "If we could **open** your head," one of his teachers **remarked**, "we would not find any brain but only a lump of fat." Chesterton eventually **became** a successful novelist. Similarly, Thomas Edison was **labeled** a "dunce" by one of his teachers, and young James Watt was called "dull and inept."

4. **Mona Lisa**

   Leonardo da Vinci's *Mona Lisa* is the most famous portrait in the history of painting. Leonardo took four years to complete the painting: he **began** work in 1503 and **finished** in 1607. Mona (or Madonna Lisa Gherardini) was from a noble family in Naples, and Leonardo may have **painted** her on commission from her husband. Leonardo is said to have **entertained** Mona Lisa with six musicians. He **installed** a musical fountain where the water **played** on small glass spheres, and he **gave** Mona a puppy and a white Persian cat to play with. Leonardo did what he could to keep Mona smiling during the long hours she **sat** for him. But it is not only Mona's mysterious smile that has **impressed** anyone who has ever **viewed** the portrait: the background landscape is just as mysterious and beautiful. The portrait can be seen today in the Louvre Museum in Paris.

5. **Hard Luck**

A bank teller in Italy was jilted by his girlfriend and **decided** the only thing left to do was kill himself. He **stole** a car with the idea of crashing it, but the car **broke** down. He **stole** another one, but it was too slow, and he barely **dented** a fender when he crashed the car into a tree. The police **arrived** and **charged** the man with auto theft. While being questioned, he **stabbed** himself in the chest with a dagger. Quick action by the police officers saved the man's life. On the way to his cell, he jumped out through a third-story window. A snowdrift **broke** his fall. A judge **suspended** the man's sentence, saying, "I'm sure fate still has something in store for you."

WRITING WITHOUT MISTAKES:

The first step in writing good error free English is to identify the common mistakes that anybody does and correct them. The following paragraphs with mistakes have been discussed in detail and the third one is for you to identify the mistakes, label them and correct them.

Paragraph 1

Steve Miller is a stingy friend of mine. When he comes to work, he never brings any money. But always asks me if I have a quarter to lend him so that he can buy cookies or a small bag of potato chips. One time he asked me to lend him a dollar so he could buy a chance from another employee for a thanksgiving turkey. I refused at first but he practically begged me. As a result, I gave him the money. As I expected, he never offered to return my dollar. When I'd remind him, he'd say, Oh yeah, I'll get it to you soon, but he never did. Another example of Steves stinginess were the time he and me and two of our friends decided to go out and eat during our lunch hour at the Red Rooster, a new restaurant. Steve suggested that we take his car, and as we were driving to the restaurant, he said his gas tank was empty. I couldn't believe he would have the nerve to ask us for gas money. With only a total of eight miles to the restaurant and back. However, he pulls into an Exxon gas station and cheerfully said that a dollar for gas from each of us would be fine. I was really fuming because I could see that his gas tank was at least a quarter full. After we pulled into the restaurant parking lot, Steve informed us that he would have to wait in the car while the rest of us ate. I asked him with hard voice, "Don't you have any money?" Steve's reply was, "Yeah, but I'm not going to spend it eating out when I can go home and eat for nothing."

Answer:

Steve Miller is a stingy friend of mine. When he comes to work, he never brings any money. **(1) But always asks me if I have a quarter to lend him so that he can buy cookies or a small bag of potato chips**. One time he asked me to lend him a dollar so he could buy a chance from another employee for a **(2) thanksgiving** turkey. I refused at first **(3),** but he practically begged me. As a result, I gave him the money. As I expected, he never offered to return my dollar. When I'd remind him, he'd say, **(4) Oh yeah, I'll get it to you soon,** but he never did. Another example of **(5) Steves** stinginess **(6) were** the time he and **(7) me** and two of our friends decided to go out and eat during our lunch hour at the Red Rooster, a new restaurant. Steve suggested that we take his car, and as we were driving to the restaurant,

he said his gas tank was empty. I couldn't believe he would have the nerve to ask us for gas money. **(8)With only a total of eight miles to the restaurant and back.** However, he (9)**pulls** into an Exxon gas station and cheerfully said that a dollar for gas from each of us would be fine. I was really fuming because I could see that his gas tank was at least a quarter full. After we pulled into the restaurant parking lot, Steve informed us that he would have to wait in the car while the rest of us ate. I asked him **(10) with hard voice**, "Don't you have any money?" Steve's reply was, "Yeah, but I'm not going to spend it eating out when I can go home and eat for nothing."

1. **a sentence fragment**. Better: When he comes to work, he never brings any money but always asks me if I have a quarter to lend him so that he can buy cookies or a small bag of potato chips.
2. **a problem with capitalization**. The "T" in Thanksgiving should be capitalized.
3. **a missing comma.** Always place a comma in front of words that link two sentences.
4. **missing quotation marks.** Better: When I'd remind him, he'd say, "Oh yeah, I'll get it to you soon," but he never did.
5. **a missing apostrophe.** Better: Steve's
6. **a subject-verb agreement problem.** Better: Another example of Steve's stinginess was. . .
7. **a pronoun case problem.** Better: . . . the time he and I and two of our friends . . .
8. **a sentence fragment.** Better: I couldn't believe that he would have the nerve to ask us for gas money with only a total of eight miles to the restaurant and back.
9. **a shift in tense.** Better: However, he pulled into an . . .
10. **a missing word.** Better: I asked him with a hard voice. . .

Paragraph 2

This paragraph tests your knowledge of paragraph structure, paragraph order and paragraph unity; it also tests your ability to think critically and to revise effectively. First, read the paragraph carefully. After you have read the paragraph, consider the questions listed at the bottom of this page.

The living conditions in many city jails are appalling. In fact, many of the jail cells aren't fit for human habitation. They are often filthy and unsanitary. Disinfectant and stuff like cleaning agents are rarely used. Roaches and rats scuttle across the floor looking for crumbs of food. Roaches, of course, are difficult to get rid of even in clean places. Scientists say that roaches have changed little since prehistoric times and that if the world were to experience an atomic holocaust, roaches would be one of the few living creatures to survive. Finally, many city jails are overcrowded. As many as three or four inmates sleep in cells that are only twelve feet wide and twelve feet long. But, of course, most criminals deserve to be treated like rats. In addition, because the pay is limited, there aren't enough guards in jails. When violence arises guards, fearing for their own safety, are afraid to take proper action. Of course, with more and more government funds being made available, this problem is easing up. In some city jails, murders and suicides have occurred because guards were occupied in other parts of the building and were unable to arrive in time to prevent them. Therefore, city and local officials can do much to improve the living conditions in city jails.

The living conditions in many city jails are appalling. In fact, many of the jail cells aren't fit for human habitation. They are often filthy and unsanitary. Disinfectant and **(1) stuff like cleaning agents** are rarely used. Roaches and rats scuttle across the floor looking for crumbs of food. **(2) Roaches, of course, are difficult to get rid of even in clean places. Scientists say that roaches have changed little since prehistoric times and that if the world were to experience an atomic holocaust, roaches would be one of the few living creatures to survive**. **(3) Finally, (4) many** city jails are overcrowded. As **many** as three or four inmates sleep in **many** cells that are only twelve feet wide and twelve feet long. **(5) But, of course, most criminals deserve to be treated like rats.** In addition, because the pay is limited, there aren't enough guards in jails. When violence arises guards, fearing for their own safety, are afraid to take proper action. **(6) Of course, with more and more government funds being made available, this problem is easing up**. In some city jails, murders and suicides have occurred because guards were occupied in other parts of the building and were unable to arrive in time to prevent them. **(7)Therefore, city and local officials can do much to improve the living conditions in city jails.**

1. **slang/vague/wordy language:** Better: Disinfectant and cleaning agents are rarely used.
2. **problem with paragraph unity:** It would be better to take these sentences out of the paragraph.
3. **inappropriate transition phrase:** Better: Secondly, many city jails are overcrowded.
4. **word repetition:** Better: Secondly many city jails are overcrowded. Three or four inmates often sleep in cells that are only . . .
5. **problem with paragraph unity:** It would be better to take this sentence out of the paragraph.
6. **problem with paragraph unity:** It would be better to take this sentence out of the paragraph.
7. **illogical concluding sentence:** Better: This problem only adds to the appalling conditions that exist in most city jails.

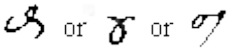
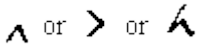
Paragraph 3

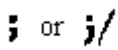
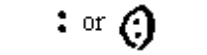
Based on the practice of the first two paragraphs, identify the mistakes in the following passage and correct them.

When I was a child, my brother took advantage of my fear of ghosts. I would be taking a shower, and my brother would open the door turn out the lights, and start "wooing" until I began to cry. Then he would almost suffocate from laughing. Other times, he would make moaning sounds through the keyhole of my bedroom door. Rattling the doorknob as well. One night he did the worst thing of all, he took out the main fuse in the fuse box, and all the lights in the house went out. Neither one of my parents were home at the time, and I was so petrified that at first I couldn't move. But I sure did move when my brother came running down the hall with a white sheet over his head. Screaming at the tip of his lungs. He must have chased me around the house for almost a half hour. I finally stopped grabbed an apple out of the fruit basket, and throwed it at him as hard as I could. I missed him but not the kitchen window. Telling my parents what happened later, they spanked my brother.

However, thanks to him, I can’t walk down a dark street today. Without thinking there is someone behind me.

PROOFREADING SYMBOLS

Symbol	Meaning	Example
	Delete	take out
	close up	print as one word
	delete and close up	close up
	Caret	insert here something
	insert a space	put one here
	space evenly	space evenly where indicated
	let stand	let marked ~~text~~ stand as set
	Transpose	change order the
	used to separate two or more marks and often as a concluding stroke at the end of an insertion	
	set farther to the left	too far to the right
	set farther to the right	too far to the left
	set as ligature (such as)	encyclopaedia
	align horizontally	alignment
	align vertically	align with surrounding text
	broken character	imperfect
	indent or insert em quad space	
	begin a new paragraph	
	spell out	set 5 lbs. as five pounds
	set in CAPITALS	set nato as NATO
	set in SMALL CAPITALS	set signal as SIGNAL
	set in lowercase	set South as south
	set in *italic*	set oeuvre as *oeuvre*

	set in roman	set *mensch* as mensch
	set in **boldface**	set important as **important**
	Hyphen	multi-colored
	en dash	1965–72
	em (or long) dash	Now—at last!—we know.
	superscript or superior	 as in πr^2
	subscript or inferior	 as in H_20
	Centered	 for a centered dot in $p \cdot q$
	Comma	
	apostrophe	
	Period	
	Semicolon	
	Colon	
	quotation marks	
	parentheses	
	Brackets	
	query to author: has this been set as intended?	
[1]	push down a work-up	an unintended mark
 [1]	turn over an inverted letter	inverted
 [1]	wrong font	wrong size or style

[1]The last three symbols are unlikely to be needed in marking proofs of photocomposed matter.

Copyediting a Text

Eruption History of Kilauea

Can you be more specific here? Are more accurate estimates available?

When Kilauea began to form is not known, but various estimates are 300,000-600000 years ago. The volcano had been active ever since, with no prolonged periods of quiescence known. geologic studies of surface exposures and examination of drillhole samples show that Kilauea is made mostly of lava flows locally interbedded with deposites of explosive eruptions. Probably what we have seen hapen in the past 200 years is a good guide to what has happened ever since Kilauea emerged from the sea as an island perhaps 50,000-100,000 ago.

Lava Erupts from Kilauea's Summit and Rift Zones

Define the jargon in this paragraph.

Throughout its history Kilauea has erupted from three main areas: its summit and two rift zones. Geologists debate whether Kilauea has Always had a caldera at the summit or whether it is a relatively recent feature of past few thousand years. It seems most likely that the caldera has come and gone throughout the life of Kilauea.

The summit of the volcano is high because eruptions are more frequent there than at any other single location on the volcano.

However, more eruptions actually occur on the long rift zones than in the summit area, but they are not localized instead construct ridges of lower elevation than the summit. Eruptions along the east and southwest rift zones have build ridges reaching outward from the summit some 125 KM and 35 KM respectively.

It's hard to figure out what you're describing here. A diagram would help.

Most eruption are relatively gentle, sending lava flows downslope from fountains a few meters to a few hundred meters high. OVER and over again these eruptions occur, gradually building up the volcano and giving it a gentle, shield-like form. Every few decades to centuries, however, powerful explosions spread ejecta across the landscape. Such explosions can be lethal, as the one in 1790 that killed scores of people in a war party near the summitting of Kilauea. Such explosions can take place from either the bridging summit or the upper rift zones.

PROOFREADING EXERCISE

1. Fred loves to tease Ethel and Lucy loves to tease Desi. **(No, this is a compound comma error. The sentence should read: Fred loves to tease Ethel, and Lucy loves to tease Desi.)**

2. Because I was on a strict diet, I only ate the cake. **(No, this is a misplaced modifier. The sentence should read: Because I was on a strict diet, I ate only the cake.)**
3. I cannot understand what happens to Pip. (**Yes, this sentence is correct.)**
4. Ethel broke the car, which is why Fred will not talk to her. **(No, this is a pronoun reference error. The word 'which' does not have an antecedent. The sentence should read: Because Ethel broke the car, Fred will not talk to her.)**
5. After we had left for Paris Englewood was thrown into grief. (**No, this is an introductory comma error. The sentence should read: After we had left for Paris, Englewood was thrown into grief.)**

USEFUL LINKS:

http://www.proofreading-course.com/proofreading-exercises.html
http://www.merriam-webster.com/mw/table/proofrea.htm
http://www.google.co.in/url?sa=t&rct=j&q=proofreading%20symbols%20exercises&source=web&cd=2&sqi=2&ved=0CFoQFjAB&url=http%3A%2F%2Fwww.steveshapero.com%2FProofreadingExercise.pdf&ei=WCWnT4qKCYHprAfV5Jj3AQ&usg=AFQjCNGLVh5wi8umL3nExegT333LSJjylQ&cad=rja
http://grammar.about.com/od/correctingerrors/a/proofverbs07.htm
http://college.cengage.com/devenglish/wong/paragraph_essentials/1e/students/exercises/index.html

3

DRAFTS OF ABSTRACT AND EXECUTIVE SUMMARY

ABSTRACT

WHAT IS AN ABSTRACT?

An abstract is a brief, accurate, and comprehensive summary of the contents of the article without added interpretation or criticism. It allows readers to survey the contents of the article which follows quickly. In preparing the abstract, it is important to keep the sentences short and simple by covering with just one topic each and excluding irrelevant information. Nevertheless, an abstract should be informative by presenting the quantitative and/or qualitative information contained in the document. The following are the two major benefits of abstract writing:

1. Placed at the beginning of the article, it helps readers to know the brief content of the article, thus saving them time to read through the whole paper. Readers normally have their first contact with an article by seeing just the abstract and deciding on the basis of the abstract whether to read the entire article. Thus, an abstract must be informative and readable; it should be well organized, concise, and self-contained.

2. It is used by abstracting and information services to index and retrieve articles. Abstract journals can directly publish an abstract as it is, thus facilitating the publication of the article which has been published in the primary publication in Abstract Journal faster and more accurate.

FUNCTIONS OF AN ABSTRACT?

An abstract is a shortened version of the first draft of a paper. It is important for several reasons:

- it provides the first chance for you to announce and cite the preliminary findings of your study;
- it allows you to communicate your findings to your colleagues and get their feedback;
- it is the starting point for achieving the ultimate aim of a research project, the writing and publishing of a full paper in peer-reviewed literature.

TYPES OF ABSTRACTS

There are two types of abstracts: informational and descriptive.

Informational Abstracts

- communicate contents of reports
- include purpose, methods, scope, results, conclusions, and recommendations

- highlight essential points
- are short—from a paragraph to a page or two, depending upon the length of the report (10% or less of the report)
- allow readers to decide whether they want to read the report

Descriptive Abstracts

- tell what the report contains
- include purpose, methods, scope, but NOT results, conclusions, and recommendations
- are always very short— usually under 100 words
- introduce subject to readers, who must then read the report to learn study results

CHARACTERISTICS OF A GOOD ABSTRACT

A good abstract should be:

1. Accurate: An abstract should reflect correctly the objectives and contents of the article. Do not include information that does not appear in the body of the article in the abstract. If the investigation extends or replicates previous research, it must be recorded in the abstract, with a brief citation of the author (initials and family name) and year. It is suggested that the author compare the abstract with the outline of the article's headings in order to verify the accuracy of the abstract.

2. Self-contained: Define all unique terms, abbreviations (except units of measurement), and acronyms in the abstract. Include names of the authors (initials and family name) and dates of publication in citations of other publications (and give a full citation in the list of references). If the article does not have a separate Keywords section, embed them in the abstract as this will enhance the readers' ability to find them; this will also help in indexing.

3. Concise and specific: Each sentence should be as informative as possible, especially the lead sentence. Make it brief. The total length of the abstract should not exceed 120 words, in one title. It may include the purpose of the investigation, the results and conclusions, or whatever is the most important to inform the readers.

4. Coherent and readable: Write clearly. Here are some suggestions as to write clearly:

• Use verbs rather than the noun equivalents.

• Use the active rather than the passive voice, but without personal pronouns (I or we).

• Use the present tense to describe results without continuing applicability or conclusions drawn.

• Use the past tense to describe specific variables manipulated or tests applied.

• Use the third rather than the first person.

HINT TO WRITE AN ABSTRACT

- Describe the main findings concisely and summarize the conclusions.
- Include all the main information covered in the paper.
- Write with a non-specialist style in mind.
- Different points should be emphasized proportionally with that of the main body of the paper.
- For short articles, the abstract should be written as a single paragraph;.
- For long articles, split the abstract into two or more paragraphs if this is clearer for the readers.
- Use past tense for what was found.
- Include as much as possible the key words from the text in the abstract.
- Avoid unfamiliar terms, acronyms, abbreviations, or symbols; or define them if there is no choice.
- Use generic name, not trade names, for chemicals and drugs.
- Identify organisms by their scientific names.
- Do not include tables, diagrams, equations, or structural formulae in the abstract.
- Avoid citing references unless the reference inspired the author to investigate further.
- Use numerals for all numbers, except those that begins a sentence. It is suggested that authors recast sentences that begin with a number.
- Abbreviate liberally. However, the abbreviations that need to be explained in the text must also be explained on first use in the text not only in the abstract.

THE OPTIMAL STRUCTURE OF AN ABSTRACT

Title

The title should be an accurate promise of the abstract's contents. It should explain as much as possible about the context and the aims of the study. Ideally, the title should be about 10–12 words long, and should include the scope of the investigation, the study design and the goal. In general, it is preferable to make the title a description of what was investigated rather than a statement of the results or conclusions. The abstract's title should be easy for the reader to understand and should not include jargon or unfamiliar acronyms or abbreviations. The title should not be in capital letters.

Authors

The list of authors should be restricted to those individuals who carried out the study, conceived it, designed it, gathered the data, analysed the numbers and wrote the abstract. The author who will present the abstract should be listed first. Every listed author should read and approve the abstract before it is submitted.

Main text

A good abstract should address the five following questions in the relevant sections:

1. "Why did you start?" – Introduction or background

You should summarise, preferably in one sentence, the current knowledge, or state-of-the-art, specifically in relation to the work you are presenting.

2. "What did you try to do?" – Aims and objectives

Here, you should state the aim of the study, and ideally include a short statement of the study's hypothesis. A legitimate scientific study is not done "to prove that something is true" but rather "to find out whether it is true." The difference may seem small, but it makes a huge difference. A formal hypothesis shows that you were objective.

3. "What did you do?" – Methods

In an abstract, the description of the methods has to be concise, and much of the details of what was done must be omitted. However, in a few short sentences, you can give the reader a good idea of the design of the study, the context in which it was done, and the types of patients or measurements that were included.

4. "What did you find?" – Results

It is important to give the main results of the study, not just in subjective terms ("We found device X to be superior to device Y") but also in the form of some real data. You will need to choose which findings to report here: it should be the most important data in your study, and the findings on which your conclusions will be based. Do not include a table or figure unless you need it to show your results.

5. "What does it mean?" – Conclusions

Here, space limitations generally limit you to a single sentence of why you think your findings are important, and their potential implications. Keep your conclusions reasonable and supportable by the findings of your study. Remember that if your study was restricted to certain patients, or a particular therapy, or a specific device, its results may not extend beyond these restrictions.

SAMPLE ABSTRACT TEMPLATE

Project Title: First Name: Last Name:
Background/importance of research topic (very brief!): An introductory description of the science of the Project and/or the significance of the research area.

Purpose/hypothesis (thesis or statement of problem): An introductory statement (thesis) explaining the reason for the research, or a statement of the problem or hypothesis.
Procedures/Data/Observations: Summary of procedures, emphasizing key points or steps, and the data you observed. Include results that made you revise procedures along the way.
Conclusions/Applications: What was learned about the hypothesis and what it means to the world.

GUIDELINES--TECHNIQUES FOR A MORE EFFECTIVE ABSTRACT

1. Use plain paper in clean layout format-
    a. One page—don't squeeze in too much in little space
    b. Black print on white paper
2. Large legible font (Reviewers all wear glasses!!)
    a. Times New Roman or Verdana--12 or 14 font size
    b. Space-and-a-half works well
3. Short sentences, correct tense, active voice, varied structure
4. Be consistent with Display—Same title (exactly), same key words, same results
5. Edit carefully—get someone else to read it.
    a. Use correct scientific terms, correct abbreviations, correct units
    b. Spell check, grammar check, punctuation check
6. Mount on display
7. Leave 10-15 copies in front of display
    a. Category Judges all day
    b. Special Awards judging in the afternoon
8. Team members each submit one abstract with forms package
9. Use only Student First Name and Project Title on Final Abstract
    a. No school affiliation
    b. No mention of laboratory or sponsor
    c. No approval by Teacher
10. No graphs or photos in the Abstract
11. Make it about YOUR work for THIS YEAR's Project
    a. Not your parents help and support
    b. Not your supervisor's lab research
    c. Not Einstein's equations

d. Not last year's work

Here are two examples of the same abstract, sample one is an example of a badly written abstract, while sample two is an example of a well-written abstract. Underlined words are links to explanations describing why the sentences are a good or bad example of an abstract.

Sample 1: This experiment will determine what will make enzymes effective and what will make them ineffective. We tested different samples of enzymes in a spectrophotometer and recorded their absorption rates. Six samples were placed in the spectrophotometer but two contained no enzyme; these acted as blanks for the other samples. The four remaining samples contained Catecholase ranging from 0.5 ml to 1.75 m. The second half of the experiment contained four test tubes with a constant amount of Catecholase, but the pH levels ranged from four to eight. It was found that if the enzyme was present in large amounts, then the absorption rate was high, and if the pH level ranged from 6 to eight then the absorption rate was high. Therefore it can be said that enzymes work well in neutral pH levels and in large amounts.

Sample 2: This experiment was performed to determine the factors that positively influence enzyme reaction rates in cellular activities since some enzymes seem to be more effective than others. Catecholase enzyme activity was measured through its absorption rate in a spectrophotometer, using light with a wavelength of 540 nm. We compared the absorbance rates in samples with varying enzyme concentrations and a constant pH of 7, and with samples with constant enzyme concentration and varying pH levels. The samples with the highest enzyme concentration had the greatest absorption rate of 95 percent compared to the sample with the lowest concentration and an absorption rate of 24 percent. This suggests that a higher concentration of enzymes leads to a greater product production rate. The samples with a pH between six and eight had the greatest absorption rate of 70 percent compared to an absorption rate of 15 percent with a pH of 4; this suggests that Catecholase is most effective in a neutral pH ranging from six to eight.

Explanations of the Example Links

Ineffective: This sentence is in the present tense and needs to be switched to the past tense. In addition to tense problems, the sentence does not tell the reader much about what is meant by the term effective. What exactly is an effective enzyme? The author needs to be specific and try to avoid generic terms such as effective. Also, the author never states why the experiment is being conducted. Why is enzyme effectiveness so important? What makes it important enough to be studied?

Rates: This sentence is addressing what was done, yet it barely conveys any information. The author states that different samples of enzymes were tested, but mentions nothing about the contents of the samples. Was the same enzyme used in every sample? What was in each sample, and what varied in each sample? Also, what does absorption have to do with enzyme activity? This correlation needs to be explained to the reader. One last detail that should be included is the wavelength of light that was used in the spectrophotometer. Did it remain constant or was it a variable as well?

Eight: This is too long and detailed to be in an abstract; it sounds as though it was pulled from the methods and materials section of the paper. The amounts of enzyme do not need to be stated, nor do the pH levels. The number of samples tested do not need to be included either; it is just extraneous information that is not crucial to understanding the experiment as a whole. The information contained in this sentence can be pulled out and rearranged to say that some samples had a constant pH and varying enzyme concentrations and other samples had constant enzyme concentrations and varying pH levels. With the controls and the variables stated you can move on to your results.

High: This is just too general, although it conveys the right information. When stating results it is okay to use actual numbers. Instead of saying that the absorption rate was high, specify how high in comparison to samples with low absorption rates.

Amounts: An experiment is never final, nor is it ever positive. Always avoid saying that the results you obtained are correct or definite. Instead just say that the data supported or did not support your hypothesis.

Others: This sentence is clear and concise, telling the reader why the experiment was carried out. It postulates the question of why some enzymes are more effective than others and it explains that the experiment was set up to determine what causes these differences.

540 nm: This sentence introduces the specific enzyme being studied and how it was studied. The light wavelength used in the spectrophotometer was also specified telling the reader that wavelength was not one of the variables manipulated in the experiment.

Levels: It is okay to use personal pronouns in the abstract and this sentence uses "we" effectively. It also defines what was done without going into great detail. The controls and the variables are stated clearly and succinctly so the reader knows what factors are being tested to determine enzyme productivity.

Clear summary: These two sentences combine the results with the conclusion. This helps to make the conclusions drawn from the results very clear to the reader. The author also stated concrete numbers in the results so the reader is aware of just how much the absorption rates changed in each sample.

SAMPLE ABSTRACT

"Quantifying the Mechanics of a Laryngoscopy"

Laryngoscopy is a medical procedure that provides a secure airway by passing a breathing tube through the mouth and into the lungs of a patient. The ability to successfully perform laryngoscopy is highly dependent on operator skill; experienced physicians have failure rates of 0.1% or less, while less experienced paramedics may have failure rates of 10-33%, which can lead to death or brain injury. Accordingly, there is a need for improved training methods, and virtual reality technology holds promise for this application. The immediate objective of this research project is to measure the mechanics of laryngoscopy, so that an advanced training mannequin can be developed. This summer an instrumented laryngoscope has been developed which uses a 6-axis force/torque sensor and a magnetic

position/orientation sensor to quantify the interactions between the laryngoscope and the patient. Experienced physicians as well as residents in training have used this device on an existing mannequin, and the force and motion trajectories have been visualized in 3D. One objective is to use comparisons between expert and novice users to identify the critical skill components necessary for patients, to identify the mechanical properties of the human anatomy that effect laryngoscopy, and thus enable the development of a realistic training simulator. In the future an advanced training mannequin will be developed whose physical properties will be based on our sensor measurements, and where virtual reality tools will be used to provide training feedback for novice users.

USEFUL LINKS:

http://research.berkeley.edu/ucday/abstract.html
http://www.ece.cmu.edu/~koopman/essays/abstract.html
http://owl.english.purdue.edu/owl/resource/656/1/
http://writing2.richmond.edu/training/project/biology/abslit.html

---

EXECUTIVE SUMMARY

WHAT IS AN EXECUTIVE SUMMARY?

The executive summary is usually no longer than 10% of the original document. It can be anywhere from 1-10 pages long, depending on the report's length. Executive summaries are written literally for an executive who most likely DOES NOT have the time to read the original. It should be in the same order as the report and should only include material that is in the main report.

- Executive summaries make a recommendation
- Accuracy is essential because decisions will be made based on your summary by people who have not read the original
- Executive summaries frequently summarize more than one document

HOW TO WRITE AN EXECUTIVE SUMMARY

An executive summary is a brief summary of an important business document. While it's the first thing people will read, it's the last thing you should write. An executive summary should be well put together as it could be the first thing your potential investor reads and it needs to make a huge impression on them. Below, each step will be laid out and described to help you come up with a powerful summary of your document that will grab attention. Then, some tips will be mentioned to ensure you give the best summary in only a couple of paragraphs. An executive summary is usually no longer than one page so it's important to fit the key points in it and have more in-depth descriptions in the actual document.

Instructions

1. Plan to create a summary each time you write a business report exceeding four pages. Write the summary after you write the main report, and make sure it is no more than one-tenth the length of the main report.
2. List the main points the summary will cover in the same order they appear in the main report.
3. Write a simple declarative sentence for each of the main points.
4. Add supporting or explanatory sentences as needed, avoiding unnecessary technical material and jargon.
5. Read the summary slowly and critically, making sure it conveys your purpose, message and key recommendations. You want readers to be able to skim the summary without missing the point of the main report.
6. Check for errors of style, spelling, grammar and punctuation. Ask a fellow writer to proofread and edit the document.
7. Ask a nontechnical person -- for example, your parents or your spouse -- to read the document. If it confuses or bores them, the summary probably will have the same effect on other nontechnical readers.

Questions to Ask Yourself as You Write

- What is your report about?
- Why is it important?
- What is included in the report?
- What is included in each section?

Concise Statement

As a cover sheet to your document, an executive summary need not go into ANY mention of how you conducted your analysis and/or what you're basing your conclusion on. Instead, begin with a concise statement of the conclusion you reached after conducting your analysis and/or research is the paper that will be attached. For example, after a comparison of what other schools like NIT Trichy do about personal calls for faculty, you conclude that the NIT Trichy is charging for calls most other institutions do not.

How you word the conclusion will differ depending on your audience and what they care most about. The following examples illustrate how the wording must change given an audience's needs.

Example One

NIT Trichy **should discontinue the practice of charging faculty for personal calls.**

This is a good example if the people you work for are only interested in this issue. It begins with a summary of conclusions regarding only the NIT Trichy population.

Example Two

Because I have found that over 75% of comparable institutions do not charge for personal calls, I have concluded that our faculty is justified in objecting to this practice which should be seen as a "perk" for our faculty.

> This sentence provides unnecessary information about other institutions and/or why the faculty think they deserve to have these calls paid for. Your readers can get that information from the report. Further, the use of "I" is unnecessary since your readers already know who wrote the report.

Writing Recommendations

After beginning with a summary statement of your findings, the executive summary should go on to provide a specific recommendation for action geared toward your audience. For example, the report on charging for personal calls was requested by the president's office, not the individual departments and colleges who actually determine policy. As a result, the recommendation for action is geared toward what the president's office should do, not the other departments involved. To learn more about writing recommendations:

After summarizing the entire article and/or research report(s), an executive summary ends with a one or two line recommendation for action.

Simple Formula

Executive summaries frequently make use of transitional phrases to encapsulate the preceding information in the same sentence as the recommendation. The format can almost be envisioned as a formula:

[transitional word] + [concise statement of information provided in summary], I recommend that [corporation, office, person in question] do [recommendations].

Justification

Finally, an executive summary provides an analysis and/or justification for the proposed action in terms the audience will consider important. In many cases, this might involve a monetary analysis as in the example to the right, but actions can be justified many ways, depending on the concerns of the audience and the topic of the report (e.g. for CSU these might include increase in student learning, better relationship with the community, etc.).

Example Justification

> Based on the current number and length of long-distance personal calls by faculty, such a proposal would cost the university 150,000/- annually. In comparison to the overall budget, this is a small amount, but one which might "pay for itself" in terms of faculty satisfaction and possible recruitment benefits.

Justification for the recommendation is by referring to information summarized. A recommendation justification is usually based on a reference to material already provided in the summary.

In other cases, the justification for the recommendation might be complicated enough to justify a summary of causes for the justification. In this case, the recommendation

paragraph usually begins with a summary of how the writer reached the conclusion that leads to the justification.

Example

Susie's Cookies began as a small business in Cleveland, Ohio which has expanded to include 45 stores throughout the Midwest. Plans have already been instituted to expand sales nationwide, using the same "mall-concept" marketing strategy which has proven successful in the Midwest. Despite these plans, Susie's Cookies may be in danger of bankruptcy.

Susie's quadrupled its sales in the last two quarters, realizing a profit of $750,000 in the current year, an increase of $250,000 over the previous year, due to its increase in advertising. To realize equivalent sale figures nationwide, however, it is projected that advertising costs will increase by 200% for the first two years of the national expansions. Further, construction costs for the new stores are estimated to be 20 million dollars.

The result of increased advertising and construction costs will put a substantial debt burden on Susie's cookies, an estimated $750,00 to 1 million a year. Given that sales did not reach current levels in the Midwest until the 45 stores had been operating for five years, projected sales nationally will not cover expansion costs. As a result, Susie's Cookies is likely to show a loss of almost $2 million for at least the next five years.

Due to the high advertisement and development costs of national expansion. Susie's Cookies may not be able to continue doing business in the future. Therefore, I recommend that Mrs. Field's does not participate in the hostile takeover under consideration because the threat of competition will not be realized.

A good business plan always requires a good Executive Summary, and a solid Executive Summary can also serve as a quick pitch to a potential investor.

EXECUTIVE SUMMARY TEMPLATE

[Tag Line - A short and attractive tagline to describe your proposition]

Contact Information [Name Address Phone/Email] **Industry** [General Industry] [Specific Industry/Segment]	**THE AGENDA** [Provide a short description of the investment opportunity you are presenting in the form of vision and/or mission statement] **MAJOR OPPORTUNITY** [Describe your target buyer's need or desire. Avoid technical terms and only focus on explaining the opportunity. Include

Development stage [Startup/Revenue/Profitable] **Year founded** [2005] **Number of Employees** [2] **Funding Opportunity** [$100,000] **Use of Fund** 0% Product Development 0% Marketing/Sales 0% Operation/Inventory 0% Existing Debt 0% Legal/Other ... **Current Monthly Burn Rate** [$0] **Current Monthly Revenue** [$0] **Existing Debt** [$0] **Existing Investors** [Equity ratio/Amount]	the profile of target customers] **SOLUTION RECOMMENDED** [Describe how you want to address the need or opportunity. Concentrate on essential value proposition and customer benefits] **POTENTIAL INCOME / RETURN YIELD** [Explain the potential profit from this project and provide supporting data such as market size, market share and growth rate. Describe your revenue model and expected profit margin] **COMPETITION ENVIRONMENT** [Describe your current & future competitors and any other external risks that the investment may be exposed to. Demonstrate knowledge of the landscape and your competitive advantage] **PLAN FOR BUSINESS** [Describe how you plan to pull it off. Summarize your sales, marketing, development and partnership plans. Highlight milestones achieved to date and planned for future] **ASSISTANCE TOOLS FOR FINANCIAL HELP** [Describe the financial resources that you have or need to make the plan successful. Include available and projected cash, burn rate and revenue. Explain how far will the investment take you and how do you plan to continue from there] **THE COMPETENCY: HOW TO ACHIEVE RESULTS**[Introduce your team and emphasize on what YOU bring to the table. Explain the role and responsibility of each member and any other human resources that you would need to execute the plan.]

SAMPLES

Scenario 1: Natural Disaster – Major Earthquake

Executive Summary

Casualties	1,400 fatalities; 18,000 hospitalizations
Infrastructure Damage	150,000 buildings destroyed, 1 million buildings damaged
Evacuations/Displaced Persons	300,000 homes destroyed
	250,000 seek shelter in safe areas
	250,000+ self-evacuate the areas
Contamination	From hazardous materials, in some areas
Economic Impact	Hundreds of billions
Potential for Multiple Events	Yes, aftershocks
Recovery Timeline	Months to years

Scenario General Description:

Earthquakes occur when the plates that form under the Earth's surface suddenly shift, causing binding and pressure, and most earthquakes occur at the boundaries where the plates meet. A fault is a fracture in the Earth's crust along which two blocks of the crust have slipped with respect to each other. The magnitude of an earthquake, usually expressed by the Richter Scale, is a measure of the amplitude of the seismic waves. The intensity, as expressed by the Modified Mercalli (MM) Scale, is a subjective measure that describes how strong a shock was felt at a particular location.

The Richter Scale is logarithmic so that a recording of 7, for example, indicates a disturbance with ground motion ten times as large as a recording of 6. A quake of magnitude 2 is the smallest quake normally felt by people. Earthquakes with a Richter value of 6 or more are commonly considered major; great earthquakes have magnitude of 8 or more. The MM Scale expresses the intensity of an earthquake's effects in a given locality in values ranging from I to XII. The most commonly used adaptation covers the range of intensity from the condition of "I – Not felt except by a very few under especially favorable conditions," to "XII – Damage total. Lines of sight and level are distorted. Objects thrown upward into the air."

In this scenario, a 7.2-magnitude earthquake, with a subsequent 8.0 earthquake following, occurs along a fault zone in a major metropolitan area of a city. MM Scale VIII or greater intensity ground shaking extends throughout large sections of the metropolitan area, greatly impacting a six-county region with a population of approximately 10 million people. Subsurface faulting occurs along 45 miles of the fault zone, extending along a large portion of highly populated local jurisdictions, creating a large swath of destruction. Soil liquefaction occurs in some areas, creating quicksand-like conditions.

Planning Considerations:

Geographical Considerations/Description –

The earthquakes occur in a densely populated urban and suburban area with a past history of earthquake activity. The highest points in the major metropolitan area are approximately 5,000 feet above sea level, and the lowest land elevations are a few feet above sea level. Most of the built environment and the population are located in the lower elevations.

Timeline/Event Dynamics –

While scientists have been predicting a moderate to catastrophic earthquake in the region sometime in the future, there were no specific indications that an earthquake was imminent in the days and weeks prior to this event.

A 7.5-magnitude earthquake strikes along the seismic zone, causing damage to a large multi- State area of several hundred square miles. Rapid horizontal movements associated with the earthquake shift homes off their foundations and cause some tall buildings to collapse or "pancake" as floors collapse down onto one another. Shaking is exaggerated in areas where the underlying sediment is weak or saturated with water. (Note: In the central and eastern United States, earthquake waves travel more efficiently than in the western United States. An earthquake of a given size in the central and eastern United States may cause damage over a much broader area than the same size earthquake in California.)Several hours later, a subsequent earthquake of magnitude 8.0 occurs. Based on past events, aftershocks are also possible. Sizeable aftershocks may occur for months after the original jolt.

Mission Areas Activated –

Emergency Assessment/Diagnosis: Disaster assessments and aerial reconnaissance are necessary. Using real-time seismic data, the Federal Emergency Management Agency (FEMA) runs an earthquake model to provide a preliminary "best guess" at the level of expected damage, subject to confirmation or modification through remote sensing and field assessments. Assessment teams must be deployed and remote sensing initiated.

Emergency Management/Response: Hazardous material spills must be managed. Emergency medical treatment, shelters, and food must be provided. A Joint Information Center (JIC) is established, and search and rescue teams must be placed on alert, some of which should be activated and deployed. Public utilities and other basic-needs services must be repaired as quickly as possible, and damage assessments should be conducted.

Hazard Mitigation: Federal support will be required to coordinate the development of plans to execute mitigation efforts to lessen the effects of future disasters. Mitigation to minimize or avoid future impacts would largely be an issue for recovery and restoration.

Evacuation/Shelter: Structural engineers are inspecting critical building, bridge, freeway, waste facilities, etc., and inspection teams are deployed to inspect hundreds of homes for safe habitability.

Victim Care: The massive number of injured and displaced persons requires a

warning order for the activation of Task Forces for the delivery of mass care and health and medical services. Temporary housing strategies must be considered.

Recovery/Remediation: Hazardous materials will contaminate many areas, and decontamination and site restoration will be a major challenge.

Key Implications:

Approximately 1,400 fatalities occur as a direct result of the earthquakes. More than 100,000people are injured and continue to overwhelm area hospitals and medical facilities, most of which have sustained considerable damage. Approximately 18,000 of the injured require hospitalization. As many as 20,000 people are missing and may be trapped under collapsed buildings and underground commuter tunnels.

More than 1 million buildings were at least moderately damaged (40% of the buildings) and more than 150,000 buildings have been completely destroyed

Service disruptions are numerous to households, businesses, and military facilities. Medical services are overwhelmed and functioning hospitals are limited. Fire and Emergency Medical Services (EMS) stations and trucks are also damaged. Bridges and major highways are down or blocked, and damaged runways cause flight cancellations. There are widespread power outages and ruptures to underground fuel, oil, and natural gas lines. Water mains are broken. Wastewater primary receptors are broken, closing down systems and leaking raw sewage into the streets. As a result, public health is threatened.

More than 300,000 households have been displaced, and many businesses have lost employees and customers. The port has been adversely affected in its capacity to provide export/import and loading/unloading capabilities, and damage to vital parts of the communications infrastructure has resulted in limited communications capabilities.

The disruption to the Nation's economy could be severe because the earthquake impacts major supply and transportation centers. Reconstruction, repairs, disposal, and replacement of lost infrastructure will cost billions of dollars. Replacement of lost private property and goods could also cost billions.

Scenario 2: Cyber Attack

Executive Summary

Casualties	None directly
Infrastructure Damage	Cyber
Evacuations/Displaced Persons	None

Contamination	None
Economic Impact	Hundreds of millions of dollars
Potential for Multiple Events	Yes
Recovery Timeline	Months

Scenario General Description:

In this scenario, the Universal Adversary (UA) conducts cyber attacks that affect several parts of the Nation's financial infrastructure over the course of several weeks. Specifically, credit-card processing facilities are hacked and numbers are released to the Internet, causing 20 million cards to be cancelled; automated teller machines (ATMs) fail nearly simultaneously across the Nation; major companies report payroll checks are not being received by workers; and several large pension and mutual fund companies have computer malfunctions so severe that they are unable to operate for more than a week.

Planning Considerations:

Geographical Considerations/Description –

The problems are experienced across the Country, as well as internationally. Overseas trade could be affected due to the mistrust in the U.S. Internet infrastructure and the problematic U.S. economy.

Timelines/Event Dynamics –

A year or two is needed for preparation. The attack is executed over a period of months to ensure extended press coverage and undermine confidence in the Internet.

Mission Areas Activated –

Prevention/Deterrence: The strength of private sector companies will be tested in regard to prevention and deterrence.

Infrastructure Protection: Although physical infrasture is not at great risk, Internet software deteroriates, and numerous systems must be repaired. This requires software expertise, time, and money to correct. If not already impacted, numerous systems would have to shut down.

Emergency Assessment/Diagnosis: The attack will be difficult to recognize. Each attack will end before anyone would have enough time to completely diagnose the problem.

Emergency Management/Response: Emergency response will be split between (1) technically bringing systems back online and instituting business continuity process, and (2)

controlling the public perception of the situation to restore confidence and prevent panicky behaviors.

Hazard Mitigation: All Internet Service Providers (ISPs), Domain Name Service (DNS)

operators, and other organizations will need to evaluate their network topologies, diversity, integrity of back-up processes, and other methods of attack prevention. Companies will also have to consider methods to improve the first responder capabilities.

Victim Care: Primarily, victim "care" will be based on economic assurance. Citizens will look for Government assurances that the Internet is a stable and viable method for conducting business and other financial operations.

Investigation/Apprehension: Using intelligence and law enforcement sources and methods, the investigators will need to determine the likely technical source and the identity of the perpetrators.

KEY IMPLICATIONS:

No significant fatalities or injuries are expected, although collateral effects (e.g., involving hospitals, emergency services responses, and control systems) may have limited fatal consequences. No property damage is expected, although those control systems that are dualhomed may cause physical damage. Service disruption would occur across many sectors with possible loss of confidence in the Internet and services offered such as online banking and ecommerce.

The greatest impact will be intermittent and unpredictable disruptions to the Internet, which will affect online banking, other e-commerce services, and general public confidence.

USEFUL LINKS:

http://writing.colostate.edu/guides/documents/execsum/
How to Write an Executive Summary | eHow.com
http://www.ehow.com/how_16566_write-executive-summary.html#ixzz1u6BsAs4f
http://www.supaproofread.com/documents/how-to-write-an-executive-summary.pdf
http://cees.tamiu.edu/covertheborder/TOOLS/NationalPlanningSen.pdf

4

WRITING INSTRUCTIONS

HOW TO WRITE TECHNICAL INSTRUCTIONS

This outlines and explains ten key characteristics of effective instructions for completing a technical task, such as installing a software application, building an office chair, or preparing a producing oil well for servicing. While each form of instruction will have its own specific aspects, all written technical instructions share some basic principles.

FIVE BASIC PRINCIPLES ABOUT WRITING INSTRUCTIONS ARE AS FOLLOWS:

1. Know your audience.
2. Provide a brief introduction.
3. Write each step as a command.
4. Use numbers for commands, bullets for options.
5. Plan to test and revise.

REMEMBER TO

1. Use clear and simple words.
   - Replace jargon whenever possible and define the jargon when it can't be replaced.
   - Introduce and define any new or uncommon terms.
2. Introduce your instructions.
   - Let the reader know immediately what the purpose of this document is.
   - Tell the reader what they will need to know and what equipment or tools they will require at the start of the document.
3. Speak directly to your readers.
   - These are instructions. You are telling the reader what to do. Writing in the second person ('you') is appropriate in this context.
4. Be Positive and Focused.
   - Stay on task.
   - Tell the ready what TO DO rather than what not to do.
5. Be consistent and exact.
   - Use the same forms for names, abbreviations, numbers, etc, throughout the document.
   - Provide exact qualities and quantities.
6. Keep your document clean.
   - Take advantage of white space to help organize your writing as well as to help readers locate what they need.
   - Use wide margins and keep steps for one logical task on the same page.
   - Make use of indentation to show the logical structure of the tasks and steps.
7. Identify necessary resources and hazards.
   - Describe hazards in a way that makes them stand apart from the rest of the text.
   - Refer to additional information, but make sure each reference adds something unique so as not to waste time or space.

8. Arrange steps in the order they will be executed.
    - Perform the task yourself, or observe someone performing the task.
    - Record the process or take notes and use these to create the tasks and steps.
9. Use appropriate illustrations.
    - Illustrations and other images should be labelled and should be directly related to at least one of the steps.
    - Make sure drawings are clear and use high-contrast lines and patterns rather than relying on colours to distinguish one element from another.
10. Anticipate problems and provide solutions.
    - Test the instructions yourself.
    - Provide a troubleshooting guide.

EXAMPLE 1

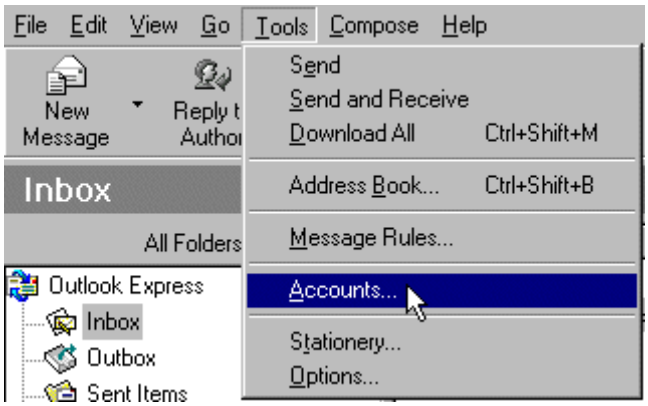
Setting Up An Email Account

How to set up your email account

This article explains how to set up an email account using Microsoft Outlook on Windows - although the same process applies to Outlook Express and Entourage on Windows and Apple platforms.
For users with other operating systems or email applications, the procedure for setting up your email account will be very similar, but it is advised that you read through the documentation for your particular software beforehand.

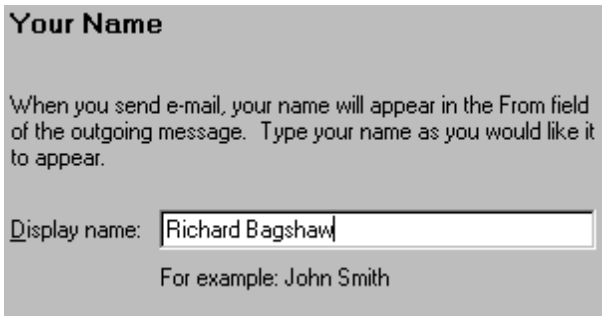
Setting Up An Email Account - First Steps

1.) Go to Tools on the menu bar (at the top of screen)
2.) Click on Accounts (A menu will then appear)
3.) Select Add > Mail



Setup Wizard - Choosing Your Name

Follow instructions from the Setup Wizard that will ask details about yourself and your company. Simply follow the on-screen instructions and complete as required.



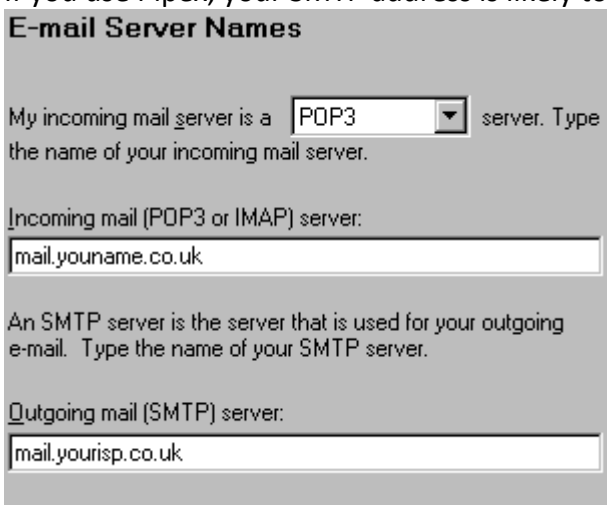
The Technical Bit

Once you have entered your name and email address, you will be presented with a screen for setting up Outlook with your e-mail server. Make sure you have chosen POP3 account in the drop down menu.

Where it says "Incoming mail (POP3 or IMAP) server" - type your pop3 address which you should have been sent (for example - mail.cleardesignin.com).

To find out what your SMTP address is (this is your outgoing mail server) you may need to contact your ISP, although here are some standard STMP addresses:

If you use BT, your SMTP address is likely to be: mail.btopenworld.co.in
If you use Telewest, your SMTP address is likely to be: smtp.blueyonder.co.in
If you use Pipex, your SMTP address is likely to be: smtp.dsl.pipex.com



Setting Up Your Email Account - Final Steps

Click on Next to take you to the Mail Log on Screen.

From here you will be asked for your username and password that your hosting provider will

have supplied. This is to authenticate your identity so that you can send and receive your e-mails.

Make sure you type both your username and password correctly. Both are case-sensitive.

If you are using Windows, you now need to configure Outlook Express to the correct type of connection that you are currently using on your computer.

The options available are:
• Connect Using a Phone-line (using a conventional modem)
• Connect using a LAN (if you are on an office network)
• Establish a connection manually.

If you are using a Mac these settings are configured automatically.

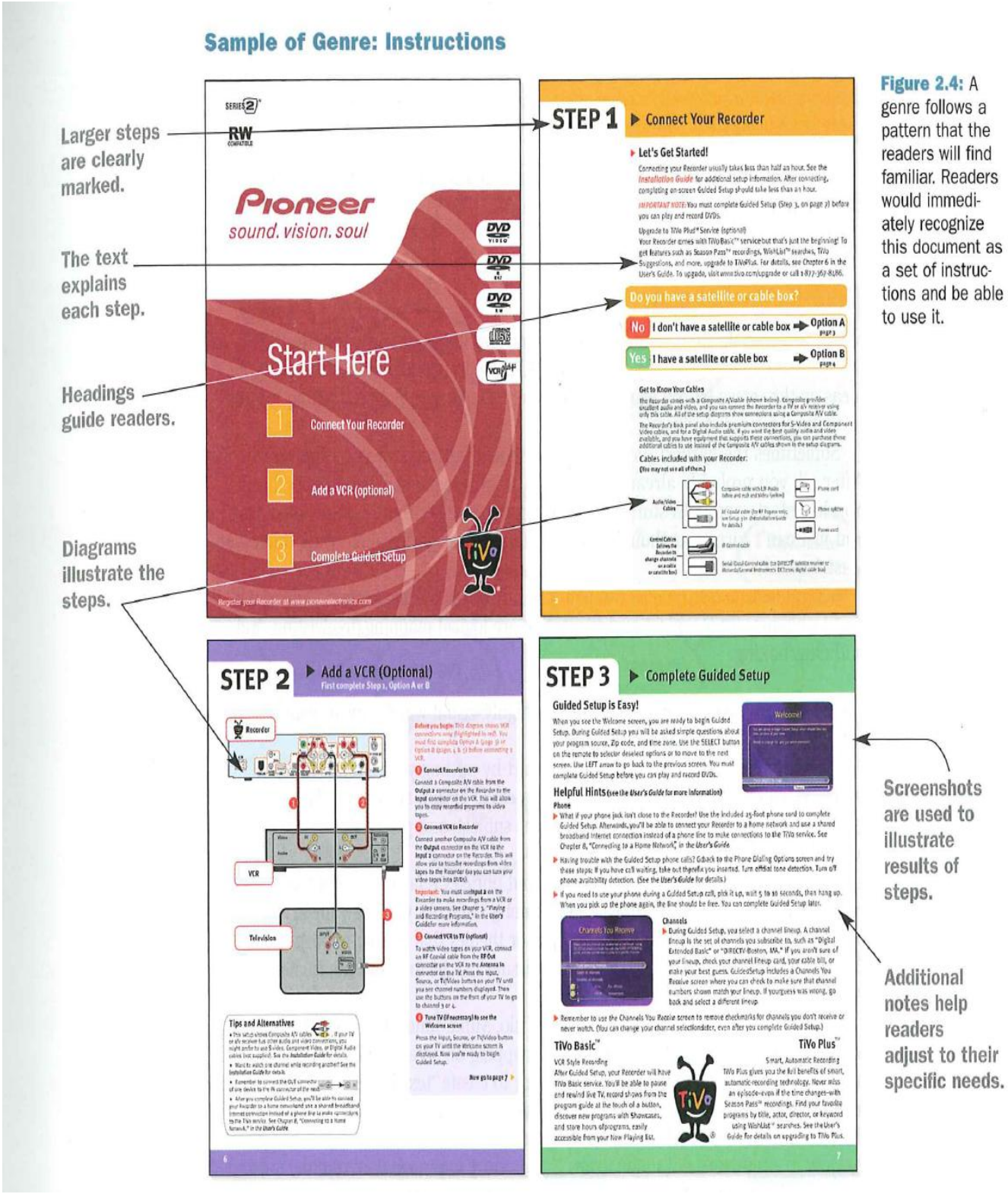


Figure 2.4: A genre follows a pattern that the readers will find familiar. Readers would immediately recognize this document as a set of instructions and be able to use it.

USEFUL LINKS:

http://www.techprose.com/webforms/techwriting_guidelines.pdf
http://www.prismnet.com/~hcexres/textbook/instrxx2c.html

5

WRITING MEMOS

There are many types of memos. The two described here are technical memos and documenting memos. Both types are frequently used to track technical projects, especially if an organization has quality assurance procedures in place.

TECHNICAL MEMOS

Technical memos are quality records used as part of engineering or planning and design procedures. Staff review and comment on the content and recommendations made in a technical memo before the project teams or consultants can continue with their work.

These memos are used to evaluate issues and discuss problems, objectives, plan selection, and design. Memos should be clear, to the point, and formal.

Technical memos should include the following:

Title: (Indicates the subject and type of technical memo.)

Prepared by: (Names the staff person or engineering or consulting firm.)

Date: (Displays current date For example, Submitted May 10, 2004/ Reviewed June 3, 2004.)

Summary: (Names the project, describes its purpose, and briefly states any conclusions or recommendations made in the memo.)

Background: (Includes a short discussion of the project background and why this issue has come about.)

Evaluation: (Discusses the issue in-depth, and evaluates the problem or situation and its possible solutions. It also includes any questions for the participants to consider.)

Recommendations: (Provides detailed conclusions and recommended solutions to the issue or problem.)

Clarity is extremely important in technical memos, so outline your thoughts before presenting them. Use simple, straightforward language.

AN EXAMPLE OF A TECHNICAL MEMO AND A TEMPLATE

Design Development

OZ Water District

DOCUMENT NUMBER REVISION

A

Effective Date:6/24/2004

Technical Memorandum

Final Technical Memorandum 3.14
Architectural Design Criteria

Prepared by: Lion, Tin Woodsman

Date: January 23, 2004

Summary

The purpose of this memo is to present the final architectural design for improvements to the ozone structure and for the proposed public viewing corridor in the ozone generation building of the Oz Water Treatment Plant (WTP). Design consideration was given to the visual impact of the improvements on surrounding neighborhoods. Exterior finishes will blend with the existing architecture to produce visually pleasing process structures.

The District uses the Oz WTP for public tours. A viewing corridor for the general public will be provided in the ozone generation building.

For the District's consideration:

• Designate an area for tour vehicle loading and unloading to lower the impact on work activities at the facility.

• Advise us of special provisions for display cases and exhibits for the viewing corridor.

• Have occupancy classifications for the viewing corridor reviewed by local building department authorities during the construction document completion phase.

Background

An initial meeting was held with District staff to review the architectural design criteria for the Oz plant. District staff then visited existing ozone generation facilities to assist in developing preferences for the design of the new facility. The ozonation improvements technical memorandum review meeting minutes dated July 24, 2000 reflect staff comments.

Architectural Design Criteria

This current work builds upon previous architectural studies completed for the Water Quality Regulation Compliance Project. They formulated exterior treatments for new ozone and chemical facilities and contributed to the development of floor plans for this ozone generation building.

Architectural and Facility Design Considerations

This section reviews specific design considerations made for each aspect of the project.

Public Accommodation

The Oz WTP is the only facility with plans for special accommodations of public tours. These facilities include a viewing corridor at one end of the ozone generation building. The new elevator and access to the viewing corridor will meet disable access requirements for the public.

The District should designate a vehicle loading and unloading area for tours prior to the start of construction document preparation. Facilities designated as public access will be designed for accessibility as required by law. Other facilities, such as the ozone contractor structures, will not be designed for public access.

The basis for not designing these areas for access is:

• These are security-restricted areas not intended for public access.
• Employees do not customarily occupy these areas, except for maintenance and operational duties.
• District employees that are physically capable of performing the essential functions of WTP operations, maintenance, and other duties associated with these facilities will be physically capable of navigating stairs or ladders for access.
• The physical requirements of these facilities due to hydraulics, chemical containment, site restrictions, or other safety or process constraint does not readily accommodate at-grade access.
We recommend review of this basis for compatibility with District policies and the District's interpretations of its obligations under the current law.

Interior Finishing

The District visited the Wicked Witch of the West WTP in West Oz and the Good Witch of the East WTP in East OZ. District staff liked the concrete floors and painted walls and suspended acoustical ceilings of the East WTP ozone facility. For Oz, we will paint the walls and ceilings, where appropriate.

Access Doors

District staff preferred the large steel doors with unequal leaves and removable transom panels. This has the advantage of allowing the use of the smaller leaf for normal ingress and egress while the larger leaf is available for moving large components into and out of the building.

Landscaping

Landscape design is not part of this scope of work. Additional landscaping will be designed and constructed by the District as a separate project. To accommodate future design, exterior walk areas should allow for later planting, empty PVC pipe sleeves should be provided under concrete for future irrigation piping and control valve wiring, and one or

more electrical conduits may need to be provided for future irrigation controller use (120 volt power).

Recommendations/Conclusions/Action

We considered the visual impacts of Stage 2 improvements to the surrounding neighborhoods and have designed the facilities. Exterior finishes will blend with existing architecture and produce visually pleasing process structures. We will prepare photo-realistic graphics to show the views from the neighbors' perspective. Drawings of the proposed ozone facilities are attached to this memorandum. Oz WTP will be primarily used by the District for tours. A viewing corridor for the general public will be provided at the ozone generation building. The District should designate a public tour route for Oz, indicating where tour vehicle loading and unloading will occur for coordination with the new facility design. Other facilities, such as the ozone contractor structures, will not be designed for public access. We recommend review of this basis for compatibility with District policies and the District's interpretations of its obligations under the current law.

The District should advise us if special provisions for displays and exhibits are desired for the viewing corridor. Occupancy classifications and viewing corridor exiting should be reviewed with the local building department authorities during the construction document completion phase.

TEMPLATE:

Company	Info	DOCUMENT NUMBER REVISION<a, b, c, etc.> Effective Date: <date>

Technical Memorandum

(Name of Technical Memorandum)
Prepared by: (Name of writer or consulting firm)
Date: (Date or date submitted)
Summary
(Include purpose of memo and summary of conclusions.)
Background
(Summarize background of this particular issue as it relates to this project.)
Evaluation of Issues
(Explain the issues involved and any related information that is pertinent to decision making or needed to support your conclusions and recommendations.)
Recommendations/Conclusions/Action
(Your recommendations, conclusions, or recommended actions supported by information in this memo.)

Company Name **MEMORANDUM**

TO: FROM:

SUBJECT: DATE:

Purpose: (Summarize memo purpose and briefly introduce the topic.)

Discussion: (Discuss and evaluate issues. Present data and information that can help the reader understand the issue and make related decisions. This data and information should also support whatever is presented in the conclusions section.)

Conclusion/Expected Action/Recommendations: (Refer to data presented. Summarize and conclude with specific recommendations and expected actions.)

_____

<Title>

USEFUL LINKS:

http://www.techprose.com/webforms/techwriting_guidelines.pdf

6

PREPARING QUESTIONNAIRES

QUESTIONNAIRES TO GATHER INFORMATION AND IDEAS

Questionnaires can be a valuable tool for gathering data, especially from a large sample population. But how can you ensure you get valid results?

SIGNIFICANT FACTORS

All these factors are significant while preparing questionnaires:

- the design
- the sample selection
- the way the questions are asked
- the way the respondent interprets the questions
- the way the reply is recorded
- the analysis of the responses.

PREPARING A QUESTIONNAIRE

Before you start, clarify what it is you need to know and why. Check that a questionnaire is the most effective way of getting the information you want. Involve research and evaluation staff from the earliest planning stage.

There are two basic methods for administering a questionnaire: self-administered, or interviews undertaken face-to-face or by telephone.

Use a proper sampling technique to select your questionnaire respondents so that they are representative of the relevant population.

Test the questionnaire first. When you pilot a questionnaire with people similar to your survey population, this helps ensure the clarity and success of the questionnaire.

Before finalizing a questionnaire, decide how you are going to process and record the responses.

WORDING OF QUESTIONS IS CRUCIAL

Ask only those questions that are absolutely necessary. If the questionnaire is too long, people will be reluctant to answer it.

Make sure the questions fit the task. If you are trying to find out how effective a policy has been, look at the original aims for the policy and break those down into indicators that would measure success in achieving those aims.

When deciding what questions to ask, you should be constantly asking, 'How will I use this information?' This helps to ensure every question is relevant and necessary.

Are you likely to get the most useful response by using multiple-choice questions or open questions? Tick-box responses are quicker to answer and easier to process.

Make sure the questions follow a logical sequence, as this will affect how they are answered.

MORE TIPS FOR WORDING QUESTIONS SUCCESSFULLY

- Use filter questions wherever possible (eg, 'If no, go to question ...'). This will save the respondent's time.
- Keep the wording simple. Avoid jargon, technical terms and abbreviations.
- Avoid leading questions, complex questions and negative questions. Ask simple questions, each about a single point.
- Be clear and consistent about the meaning of concepts. Words such as 'income' or 'employment' may need to be defined.
- Make sure the response categories do not overlap. A common overlap occurs in age categories, eg, 10-15, 15-20 years.
- Make sure that your response categories cover the full range of possibilities. Always provide a catch-all option such as 'other (please state)', 'not applicable' or 'don't know'.

QUESTIONNAIRE INSTRUCTIONS

Every questionnaire, whether self-administered or administered by interview, should contain clear instructions on how it is to be filled out. Go through the questionnaire with the people who will be administering it, to ensure that they understand each question and the reasons for asking.

PROCESSING ANSWERS

Keep a record of the number of questionnaires administered or sent out, and the number of responses received. If the survey population is made up of groups with distinct characteristics (eg, urban/rural, different ages or ethnicities) you may want to know the response rate from each group. Your recording system will need to make that possible. The response rate is fundamental to the weight or reliability that can be attributed to the results.

SAMPLE QUESTIONNAIRE DESIGN FORMAT:

Name: _____ [Name of the participant]

Address: _____ [Home Address of the participant]

Gender: _____ [Gender of the participant (M/F)]

Age: _____ [Age of the participant]

Phone: _____ [Phone number of the participant]

Email: _____ [Email Address of the participant]

First Question: [The First Question should focus on areas like the participants knowledge about the product. Questions like How you came to know about the product or Which brand comes to your mind first while talking about this product.]

Second Question: [The second Question should focus on asking the participant about the usage of the product. Here you can ask questions like How often do you use this product, or Which brands of this product have you used, or How useful do you find this product.]

Third question: [The third question should emphasize on going into detail of the product usage. In this section the question like Do you own this product, which brand of this product you own or For how long are you using this product can be asked.]

Fourth Question: [The fourth question should focus on the target audience and in identifying the popular brands that people are using or want to use. Here in this section you can frame questions like Are you brand conscious when it comes to buying this product, or What qualities do you look for in a brand etc.]

Other Questions: [Depending upon the requirements, other questions are framed]

Sample Questionnaire:

The following passage is from a short story. Paul, a school teacher, has been accused of hitting a student. He has voluntarily taken time off work. He has been home for a few days but has told his wife, Carol, only that he needs to take some time off. They are at the dinner table:

Carol propped herself up on her elbows. 'I heard some kids talking this afternoon,' she said.

'They were talking about you in the library.'

'What did they say?'

'Just tell me, Paul,' she said. 'I just want to know why you aren't at work.'

'Why? What did they say?'

'What do you think they said? What could they say?'

He put his hands over his face and breathed loudly.

'Tell me, Paul. Please tell me. Why aren't you at work?'

‘I need a break,’ he said rubbing his thumb over his lips. ‘I just need a break.’

‘But is it true what they said? Is it?’

He looked at her like he wasn’t sure what to say.

‘The kids, Paul. The kids.’ She leaned towards him. ‘Is it true what they said. They said

that you hit one of the students,’ Carol said. ‘Did you?’

He looked up at her. ‘What do you think? Do you think that I could do that? Do

you?’

‘No,’ she said. ‘But the kids . . .

1.In this passage, Carol is trying to

a. punish Paul.
b. protect the students.
c. clarify the situation.
d. avoid confronting Paul.

2. Paul did hit a student. When he says ‘Do you think that I could do that?’ (line 14) he is

a. expressing total surprise.
b. defending his behaviour.
c. avoiding answering the question.
d. trying to make light of the incident.

Reference:

http://www.goodpracticeparticipate.govt.nz/techniques/questionnaires.htmlSample Technical - Report writing

7

STATEMENT OF PURPOSE

A statement of purpose, or personal statement, is a brief and focused essay about one's career or research goals, and is frequently required for applicants to universities, graduate schools, and professional schools. A statement of purpose (SoP) is a concise essay about one's career goals, identified means to achieve them and accomplishments so far towards those goals. It is a required document when applying for admission to most professional programs in the United States. Often, SoP is used as a yardstick to assess the capabilities of a prospective student in terms of critical thinking, analytical abilities, interests, aims and aspirations. It is a good way for an applicant to communicate with the admissions committee. Most admissions committees look for a short, crisp and ideologically clear SoP.

It is also known as a Graduate School Essay. Other universities sometimes call it a "Letter of Intent", "Letter of Intention", "Statement of Intent", "Statement of Intention", "Statement of Interest", "Goals Statement", "Personal Statement", "Personal Narrative" or "Application Essay". The name can be just a name but often it influences content and length of the essay. Every university has its own regulations, but most of the time it will be 1-2 pages.

PREPARING YOUR STATEMENT OF PURPOSE & PERSONAL STATEMENT

Keep these in mind while writing your Statement of Purpose

- Think very seriously about why you really want to go to graduate school and put it in your statement.
- Make your Statement reflect your thought about the research and writing work you have done. It should mention what inspired you to pursue literary criticism, and the sort of very broad trajectory you'd like to pursue.
- It's fine to mention professors who inspired your work and thought, and why.
- Personal history is fine if it is relevant to your decision or what you intend to pursue in school.

SEVERAL POINTS OF ADVICE FOR STATEMENTS OF PURPOSE AND WRITING SAMPLES

- Spend LOTS of time on your statement of purpose! It is one of the things in your application that will set you off from the other applicants.
- Be honest, but don't be sappy. You should really think about why you want to go to graduate school, and why a particular program seems to be a good fit. Avoid the "I love literature", the "I love to read" or the "I really want to teach" statement at all costs.
- Be ready to outline your interests as closely as you can. Explain what you want to work on and why a particular program's faculty is exciting to you.

- Have current faculty members (especially those writing your letters of recommendation) read your statement. This is very important. Begin working on it early so you can revise!
- Ask a anyone you trust to read it over as well—again, give them lots of time to do this!.
- Your writing sample should be a research paper from a class you have taken here. It should usually be from 12-25 pages long and should represent your best intellectual work.

If it is in the field you want to pursue, all the better, but it need not be. Your English seminar paper might be a good example of the type of work you should be submitting.

- REVISE that writing sample substantially! Again, with the help of those faculties writing letters on your behalf. You may want to ask (well in advance) what sort of changes might move the paper towards graduate level and work on those revisions for your applications.

WRITING A WINNING STATEMENT OF PURPOSE

I. Determine your purpose in writing the statement

Usually the purpose is to persuade the admissions or employment committee that you are an applicant they should choose. The statement is to show that you have the ability and motivation to succeed in your field or you may want to show the committee that, on the basis of your experience, you are the kind of candidate who will do well in the field. Whatever the purpose, it must be explicit to give coherence to the whole statement.

1. Pay attention to the purpose throughout the statement so that extraneous material is left out.
2. Pay attention to the audience (committee) throughout the statement. Remember, your audience is made up of faculty members who are experts in their field. They want to know *that* you can think as much as *what* you think.

II. Determine the content of your statement

Be sure to answer any direct questions fully. Analyze the questions or guidance statements.

For example: "What are the strengths and weaknesses in setting and achieving goals and working through people?" In this question there are actually six parts to be answered 1) strengths in setting goals, 2) strengths in achieving goals, 3) strengths in working through people, 4) weaknesses in setting goals, 5) weaknesses in achieving goals and 6) weaknesses in working through people. Pay attention to small words. Notice: This example question says *through* people not with people, if it says *with* people, answer that way.

Usually graduate and professional schools are interested in the following:

1. *Your purpose in graduate study*. This means you must have thought this through before you try to answer the question.

2. *The area of study in which you wish to specialize*. This requires that you know the field well enough to make such decision.

3. *Your future use of your graduate study*. This will include your career goals and plans for your future.

4. *Your special preparation and fitness for study in the field*. This is the opportunity to relate your academic background with your extracurricular experience to show how they unite to make you a special candidate.

5. *Any problems or inconsistencies in your records or scores* such as a bad semester. Be sure to explain in a positive manner and justify the explanation. Since this is a rebuttal argument, it should be followed by a positive statement of your abilities.

6. *Any special conditions that are not revealed elsewhere* in the application such as a large (35 hour a week) work load outside of school. This too should be followed with a positive statement about yourself and your future.

7. You may be asked, "Why do you wish to attend this school?" This requires that you have done your research about the school and know what its special appeal is to you.

8. Above all this, the statement is to contain information about you as a person. They know nothing about you that you don't tell them. *You* are the subject of the statement.

III. Determine your approach and the style of the statement

There is no such thing as "the perfect way to write a statement." There is only the one that is best for you and fits your circumstances.

There are some things the statement should not be:

a. Avoid the "what I did with my life" approach. This was fine for grade school essays on "what I did last summer." It is not good for a personal statement.
b. Equally elementary is the approach "I've always wanted to be a _____." This is only appropriate if it also reflects your current career goals.
c. Also avoid a statement that indicates your interest in psychology is because of your own personal psychotherapy or a family member's psychological disturbance. While this may have motivated many of us to go on to graduate study in psychology, this is not what your audience is necessarily looking for in your statement.

THESE ARE SOME THINGS THE STATEMENT SHOULD DO:

1. It should be objective yet self-revelatory. Write directly and in a straightforward manner that tells about your experience and what it means to you. Do not use "academese" or jargon.
2. It should form conclusions that explain the value and meaning of your experiences such as: (1) what you learned about yourself; (2) about your field; (3) about your future goals; and (4) about your career concerns.

3. It should be specific. Document your conclusions with specific instances or draw your conclusions as the result of individual experience. See the list of general Words to Avoid Using without Explanation listed below.
4. It should be an example of careful persuasive writing.

CONSIDERATIONS ABOUT FORM:

1. Keep to the Page Limit Number!!! Reviewers have to read hundreds of these applications; don't overburden them with extra pages.
2. Do not leave in typographical errors. You don't want to be taken less seriously due to a typo, rite? (laugh)

Words <u>to avoid</u> using without explanation

significant	invaluable	appealing to me
interesting	exciting, excited	appealing aspect
challenging	enjoyable, enjoy	I like it
satisfying, satisfaction	I can contribute	it's important
rewarding	valuable	fascinating
gratifying	helpful	appreciate
meaningful	useful	helping people
meant a lot to me	feel good	I like to help
stimulating	remarkable	people
incredible		

CHECKLIST FOR WRITING A STATEMENT OF PURPOSE

<u>Organization ...</u>

- ✓ A "hook" that demonstrates your passion for the field
- ✓ Segué to your background in the field
- ✓ Description of your academic background in the field
- ✓ Specific classes you have taken, given by name
- ✓ Specific professors you have had, especially if well-known in that field
- ✓ Extracurricular activities in the field
- ✓ Publications or other professional accomplishments in the field (perhaps conference presentations or public readings)
- ✓ Explanations about problems in background (if needed)
- ✓ Explanation of why you have chosen the specific grad school
- ✓ Mention one or two professors in that school and what you know of and appreciate about their work
- ✓ Specific features of the grad program which attract you
- ✓ Get advice from several of your professors — philosophical advice as well as specific writing advice
- ✓ Proofread and copyedit; ask friends to proofread and copyedit as well
- ✓ Keep working on the statement of purpose, even after you have already sent it to school(s) with earlier deadline(s)

SAMPLES:

1. An SoP by an Engineering Student

When I heard that theoretical strength of a material is higher than its practical strength as much as hundreds times and that is all only because of presence of cracks, I was surprised. I decided to learn this phenomenon and carried out great number of various investigations to understand how cracks grow and how to predict demolition of materials with cracks. Now I can definitely say that I approached the final explanations of these questions.

I have been interested in science for a very long time. In high school, I attended additional physical course that included theoretical training as well as work in a school laboratory. There I first tried myself as an experimentalist making a simple hologram. When I started my studies at Moscow Institute of Physics and Technology (MIPT) my interest in experimental physics only increased. MIPT opened great opportunities for my growth. After close acquaintance with laboratories of our department and their researches, I decided to work in field of experimental mechanics.

Investigations of mechanical properties of materials attracted my attention. In my second year I had spent all my spare time in the laboratory and it allowed me to make great progress in my investigations. My first research project was about stress concentration, especially at the top of the crack. My oral topic at Final Exam in physics was "Determination of stress concentration at the top of the crack". Later my interest shifted to more complex problem - investigations of crack creep growth and creep fracture. With results of this research, I took part in Scientific Technical Conference of MIPT with report "Investigation of kinetics of cracks by polarization-optics method". I was the only student from my Department who took part in this Conference. My work won third place award in the section "Physical Mechanics" and as one of the best works of the Conference will be published in the collection "Transactions of MIPT 1997". Currently I prepare my latest work for publication in scientific journal "Applied Mathematics and Mechanics".

Work in the laboratory gave me many qualities that will be needed for successful Ph.D. study. The strongest is skill to work with laboratory equipment. Participation in Scientific Conference developed my public speaking skills. That all and Bachelor of Sciences that I will receive next June will help me in graduate study at Your University. Another skill that work in the laboratory gave me is skill to communicate with people and as a result I became the captain of my department soccer team and later the captain of my institute soccer team. In addition, I think my participation in the Students' Theater helps to form my personality. I think I will not only enhance scientific potential of Your Department, but also enrich cultural and sport life of Your University.

Unfortunately the latest changes in Russia brought about not only positive democratic reforms and political freedom but also reduction of employment possibilities for scientists and curtailment of stable government subsidies for scientific projects. As a result the concerns about students suffered a lot. All this encouraged me to look for possibilities to continue my study in the USA. I think it would be a good chance to receive high-level education under guidance of strong scientists and excellent teachers and with the help of first-class equipment.

2. A Statement of purpose by a The Computer Science and Electrical Engineering student from India

'Conceiving ideas and developing systems that deliver that promise' is a personal goal that I

have set for myself. When translated into actions this goal has reinforced my belief in leadership through creativity.
As a student in high school I had the idea of a drip irrigation system by a windmill. Using some old hose pipes, plastic tubes and a pulley arrangement I developed the model. This model won the gold medal at the prestigious Indian National science congress. While still in the third year of undergraduate program in Engineering I became the Technical consultant for a start up company. My technical idea won the first prize at Eureka 50K, India's first Business Plan competition. For the past two and a half years I have been working in XXX corporation. The will to learn and the ability to spend long hours of cerebration on trouble shooting have made me a dependable team player.
Today as a 24-year-old individual I perceive that life for me has been a process of conscious evolution. The most integral part of this growth is the value system imbibed in me by my parents, teachers and my mentors and an intrigued liking for science. This played a vital role in my decision making for the future. As I finished high school I was selected for the Indian Naval Academy with merit ranking in the Top 25 in the country. However my liking for science guided me into pursuing a Bachelor degree in Electrical Electronics and Power (EEP) Engineering. This decision gave me ample opportunity to consolidate my creative energies and harness my technical aptitude.
In college, I always enjoyed long hours in the labs. It gave me the opportunity to correlate theory to practical phenomena. This in turn gave me a better understanding of the subject and newer lines of thinking. The course in EEP covered a wide panorama of subjects. Besides the core Electrical Engineering subjects I also studied major electronics subjects like electronic devices and circuits, Linear Integrated Circuits and Pulse and Digital switching circuits. I learnt programming in ANSI C and by the time I was in final year I developed a fair amount of expertise writing complex pieces of code.
In the third year of my engineering studies I was introduced to the subject of Control Systems. The first session in the labs was devoted to developing simple programs for a Simatic PLC. A combination of AND, OR blocks generating a complete control circuit for a motor fascinated me. I took up an internship in the Controls Lab and got to interact with Prof. A, a professor of great repute in the field of Automation and Controls. He introduced me to the synergies of Information technology and Automation systems. Under his guidance I completed the thesis in PC based Load Flow Analysis and also worked with the Mechanical Dept for PC based control of Robotic Arm.
Working on the projects gave me a sound technical base. But the greatest advantage of involving myself in these activities was that I developed the ability to multi-task effectively. Besides the college academics I was actively involved in the extra-curricular activities. I represented my college at state level Table Tennis and Debate competitions. I wanted to self-finance my education and worked part-time. I was also an active amateur environmentalist. The driving force behind all this was my aim to develop all the facets of my personality. In this process I could not achieve the grades I wanted to in the first and second year. But soon I garnered the skill of judicious allocation of time and energy. I did well in the third year and final year of Engineering. Moreover I do not feel that the marks I scored are the sole indicators of my understanding of the subject. A cogent reason to augment my belief is the final year of my engineering.
XX (my present employer) visited the college campus and offered me a job in the area of Process Automation and MES. I was among the twenty candidates selected from the best institutes across the country. I passed the six rounds of technical and personal interviews

and I was the only student to be selected from the college. I decided to take up the job. For me it meant a chance to apply the knowledge gained so far in Controls and Automation systems and gain some industrial exposure. Besides this the job can help finance some part of my future education.
Unlike the milieu of the college, the corporate environment was very much different. The concept of learning on the job, accountability for the work at hand, conformance to in-housework flow standards gave me a greater focus. The most challenging aspect however was the rate of the learning, which was immense. In one year I developed competence in Real - time Energy management solutions. As part of my first project I developed software for Energy Management in a Cement Plant. The concept was based on the collection of Real-time Data from the DCS (Digital Control System) and populating a Database. With a certain degree of intelligence built into the software energy saving in the Cement unit was as high as 5%. This was a solution implemented for the first time by XX corporation in a Cement Plant. In recognition of my work I was selected as a team member for the deployment of the XX Industrial IT platform solutions.
I deployed solutions in the field of Statistical Process control and Asset Optimization in Metals and Cement Industries. During these projects I got to interact with the R&D teams in XX and I also went through some research papers in my leisure time. The experience gained in the deployment of solutions and interaction with the technical teams of customers gave me a new insight. I realized that the business process decision making and the technical processes are not integrated in Real time. Although solutions like ERP aim to achieve this goal, information still exists in islands. In order to seamlessly integrate these areas a new architecture that links Automation systems and MES solutions needs to be developed. However this calls for comprehensive research. I cannot pursue this idea while still in a job. Besides an academic program under the guidance of able professors would help me identify my specific research interests. Hence I have decided to pursue my Master degree in a research-focused environment.
The Center for Intelligent Machines Industrial Automation Lab at YY offers the best courses in this domain. The application driven research and development carried out in this lab coheres to my liking. I would like to carry out my research under the guidance of Prof. B. I believe that under his supervision I can proactively contribute to the work done in the Lab. His areas of work are of great interest to me and I believe that I can prove to be an effective and reliable team member in carrying out cutting edge research in this domain.

3. An SoP by an Indian Biomedical Engineering Student
Draft version. Some of the reviewer's comments are left in ***italic***.

I am interested in Biomedical Engineering as a field to pursue my career in. I find its unique mix of Engineering, Medicine and Life Sciences very exciting. It is a fast growing area with tremendous potential for research and also an increasing number of applications in today's world of medicine and technology. I am paricularly interested in the application of microsystems technology and the latest microelectronics technology in developing implanted biomedical devices and other medical products. My research interests lie primarily in the areas of Smart Sensors and Integrated Microsystems. My parallel areas of interest are the design and fabrication of Biomaterials and determining the mechanical, transport and biocompatability properties of implantable artificial materials and the

applications of Biomedical Instrumentation. To help you understand my current professional goals and research interests better, I would like to first explain my educational experience up to this point.

I have recently graduated from the Electrical and Computer Engineering department at XX University where I completed a non-thesis Masters program in Computer Engineering. My decision to pursue graduate studies in Computer Engineering was the natural culmination of my undergraduate coursework in Electrical and Electronics Engineering where I majored in Computer Organization and Microcomputer Systems. Also, I wanted to broaden my horizons and gain relevant exposure in the field of Computer Hardware.

During the one and a half years of my graduate studies I gained a deep understanding of various fields in Computer Engineering mainly microarchitecture, VLSI System Design ,Analog Electronics and the fundamentals of computer networking and communication. As part of my graduate coursework, I received a number of opportunities to work closely with semiconductor technology through various design, implementation and research projects. Working on key projects like the design of a 4-bit slice microprocessor, 6-bit FLASH Analog-to-Digtal Converters and a number of simulations and experiments to design and determine the performance of computers at the microarchitecture level, I got the opportunities to use state-of-the-art hardware design and simulation tools like the Cadence , Synopsys, Hspice and Verilog.

It was during this phase that I developed an interest in exploring the areas of application of semiconductor and microsystems technology in non traditional fields like the Medicine and life sciences. My studies revealed to me both a high research potential and a significant growth in the application of microelectronics and microsystems in the field of Biomedical Engineering. What I discovered significantly improved my understanding of the subject and further enhanced my fascination for it.

[Have you worked on any particular research projects? If yes, definitely elaborate on this. Are you interested in any particular faculty at W.University? If yes, definitely mention it.]

I look forward to a career in committed research where I can not only use my academic background to achieve my research goals but also make original scientific contributions to my field of interest and to mankind in general. I believe that graduate studies would provide me with the opportunities to attend advanced courses and be the stepping stone to my career in research. Graduate study at Wayne State University holds this promise for me. The quality of the faculty, flexibility of the graduate program, the diverse areas of ongoing research, the carefully designed depth and breadth of courses, cultural diversity in the graduate school, seem to me as the right ambience to nurture my research interests and work towards my goal. It would be a matter of great pride for me to be a part of this rich interdisciplinary interface *[This is all very general ideas and your statement needs to be personal, about you. Plus next paragraph gives praise to the university and one paragraph is plenty, so I would suggest eliminating this paragraph altogether or partially adding it to the last one]*

My strengths are a strong academic background, sense of teamwork, integrity and ability to put in sustained quality effort consistently . It is my desire to have a mutually beneficial association with your University and to contribute my best to the field of Biomedical Engineering .I am aware that X University has high standards for admitting students to its graduate programs. I believe that my academic credentials together with my research interests and potential would help me gain admission to the esteemed Department of Biomedical Engineering at X Universuty. I hope that on reviewing my application package,

the University would be convinced of the same. *[You might want to change your last paragraph, especially last two sentences. It needs to be more powerful, not hopefull. See examples on my website. I would rewrite this paragraph altogether.]*
Ivan Ivanov

GETTING STARTED TO WRITE AN SOP

EXERCISES:

A. Recalling and analyzing experience - write short paragraphs on the following:

1. Pick a memorable accomplishment in your life. What did you do? How did you accomplish it?

2. What sort of important activities have you engaged in? With whom? What role did you play?

3. What work experiences have you had? What was your job? Responsibility? How did you carry it out?

- Now look over your paragraphs. What skills and qualities do you see that you possess? For example, consider working with others. Were you a leader? important "team" player?
- Looking at what you have found, you can now look for skills and qualities that will help you in graduate school. What factors stand out?
- NOTE: You will undoubtedly have more material than you can use. This is good, but you need to make strategic choices.

B. Your career goals - write two short paragraphs:

1. What career have you chosen? What factors formed this decision?

2. What evidence shows that this is a correct choice? That is, how can you show that this choice is realistic? (Personal experience in the field is a good place to begin.)

USEFUL LINKS:

http://www.statementofpurpose.com/
http://www.uni.edu/~gotera/gradapp/stmtpurpose.htm
http://www.sjsu.edu/faculty/gcallaghan/graduate/winningstatement.htm
http://dictionary.sensagent.com/statement+of+purpose/en-en/
http://alumnus.caltech.edu/~natalia/studyinus/guide/statement/samples.htm

8

TECHNICAL REPORT WRITING

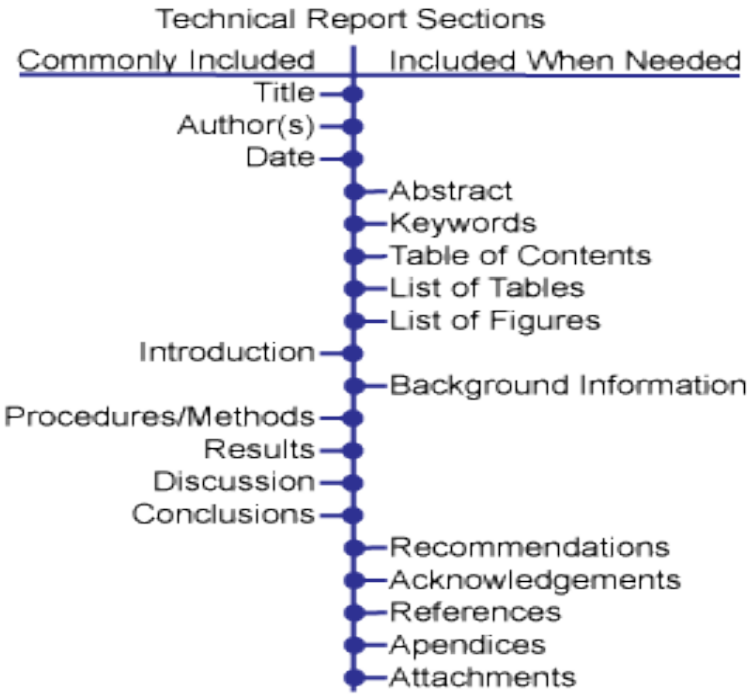
A technical report is a formal report designed to convey technical information in a clear and easily accessible format. It is divided into sections which allow different readers to access different levels of information. This guide explains the commonly accepted format for a technical report; explains the purposes of the individual sections; and gives hints on how to go about drafting and refining a report in order to produce an accurate, professional document.

STRUCTURE

A technical report should contain the following sections;

Section	Details
Title page	Must include the title of the report. Reports for assessment, where the word length has been specified, will often also require the summary word count and the main text word count
Summary	A summary of the whole report including important features, results and conclusions
Contents	Numbers and lists all section and subsection headings with page numbers
Introduction	States the objectives of the report and comments on the way the topic of the report is to be treated. Leads straight into the report itself. Must not be a copy of the introduction in a lab handout.
The sections which make up the body of the report	Divided into numbered and headed sections. These sections separate the different main ideas in a logical order
Conclusions	A short, logical summing up of the theme(s) developed in the main text
References	Details of published sources of material referred to or quoted in the text (including any lecture notes and URL addresses of any websites used.

Bibliography	Other published sources of material, including websites, not referred to in the text but useful for background or further reading.
Acknowledgements	List of people who helped you research or prepare the report, including your proofreaders
Appendices (if appropriate)	Any further material which is essential for full understanding of your report (e.g. large scale diagrams, computer code, raw data, specifications) but not required by a casual reader



PRESENTATION

For technical reports required as part of an assessment, the following presentation guidelines are recommended;

Script	The report must be printed single sided on white A4 paper. Hand written or dot-matrix printed reports are not acceptable.
Margins	All four margins must be at least 2.54 cm
Page numbers	Do not number the title, summary or contents pages. Number all other pages consecutively starting at 1
Binding	A single staple in the top left corner or 3 staples spaced down the left hand

	margin. For longer reports (e.g. year 3 project report) binders may be used.

PLANNING THE REPORT

There are some excellent textbooks contain advice about the writing process and how to begin. Here is a checklist of the main stages;

- Collect your information. Sources include laboratory handouts and lecture notes, the University Library, the reference books and journals in the Department office. Keep an accurate record of all the published references which you intend to use in your report, by noting down the following information;

  Journal article:
  author(s)
  title of article
  name of journal (italic or underlined)
  year of publication
  volume number (bold)
  issue number, if provided (in brackets)
  page numbers

  Book:
  author(s)
  title of book (italic or underlined)
  edition, if appropriate
  publisher
  year of publication

  N.B. the listing of recommended textbooks in section 2 contains all this information in the correct format.

- Creative phase of planning. Write down topics and ideas from your researched material in random order. Next arrange them into logical groups. Keep note of topics that do not fit into groups in case they come in useful later. Put the groups into a logical sequence which covers the topic of your report.

- Structuring the report. Using your logical sequence of grouped ideas, write out a rough outline of the report with headings and subheadings.

WRITING THE FIRST DRAFT

Who is going to read the report? For coursework assignments, the readers might be fellow students and/or faculty markers. In professional contexts, the readers might be managers, clients, project team members. The answer will affect the content and technical level, and is a major consideration in the level of detail required in the introduction.

Begin writing with the main text, not the introduction. Follow your outline in terms of headings and subheadings. Let the ideas flow; do not worry at this stage about style, spelling or word processing. If you get stuck, go back to your outline plan and make more detailed preparatory notes to get the writing flowing again.

Make rough sketches of diagrams or graphs. Keep a numbered list of references as they are included in your writing and put any quoted material inside quotation marks

Write the Conclusion next, followed by the Introduction. Do not write the Summary at this stage.

REVISING THE FIRST DRAFT

This is the stage at which your report will start to take shape as a professional, technical document. In revising what you have drafted you must bear in mind the following, important principle;

- the essence of a successful technical report lies in how accurately and concisely it conveys the intended information to the intended readership.

During year 1, term 1 you will be learning how to write formal English for technical communication. This includes examples of the most common pitfalls in the use of English and how to avoid them. Use what you learn and the recommended books to guide you. Most importantly, when you read through what you have written, you must ask yourself these questions;

- Does that sentence/paragraph/section say what I want and mean it to say?
  If not, write it in a different way.
- Are there any words/sentences/paragraphs which could be removed without affecting the information which I am trying to convey?
  If so, remove them.

DIAGRAMS, GRAPHS, TABLES AND MATHEMATICS

It is often the case that technical information is most concisely and clearly conveyed by means other than words. Imagine how you would describe an electrical circuit layout using words rather than a circuit diagram. Here are some simple guidelines;

Diagrams	Keep them simple. Draw them specifically for the report. Put small diagrams after the text reference and as close as possible to it. Think about where to place large diagrams.
Graphs	Keep them simple. Draw them specifically for the report.
Tables	Is a table the best way to present your information? Consider graphs, bar charts or pie charts. Dependent tables (small) can be placed within the text, even as part of a

	sentence. Independent tables (larger) are separated from the text with table numbers and captions. Position them as close as possible to the text reference. Complicated tables should go in an appendix.
Mathematics	Only use mathematics where it is the most efficient way to convey the information. Longer mathematical arguments, if they are really necessary, should go into an appendix. You will be provided with lecture handouts on the correct layout for mathematics.

THE REPORT LAYOUT

The appearance of a report is no less important than its content. An attractive, clearly organised report stands a better chance of being read. Use a standard, 12pt, font, such as Times New Roman, for the main text. Use different font sizes, bold, italic and underline where appropriate but not to excess. Too many changes of type style can look very fussy.

Headings

Use heading and sub-headings to break up the text and to guide the reader. They should be based on the logical sequence which you identified at the planning stage but with enough sub-headings to break up the material into manageable chunks. The use of numbering and type size and style can clarify the structure as follows;

3 Methods of harnessing wave energy

3.1 Shore-based systems

3.2 Deep-water systems

3.2.1 *"Duck"* devices
3.2.2 Rafts

REFERENCES TO DIAGRAMS, GRAPHS, TABLES AND EQUATIONS

- In the main text you must always refer to any diagram, graph or table which you use.
- Label diagrams and graphs as follows;

  Figure 1.2 Graph of energy output as a function of wave height.

  In this example, the second diagram in section 1 would be referred to by "...see figure 1.2..."
- Label tables in a similar fashion;

  Table 3.1 Performance specifications of a range of commercially available GaAsFET

devices

In this example, the first table in section 3 might be referred to by "...with reference to the performance specifications provided in Table 3.1..."

- Number equations as follows;

$F(dB) = 10*\log_{10}(F)$ (3.6)

In this example, the sixth equation in section 3 might be referred to by "...noise figure in decibels as given by eqn (3.6)..."

ORIGINALITY AND PLAGIARISM

Whenever you make use of other people's facts or ideas, you must indicate this in the text with a number which refers to an item in the list of references. Any phrases, sentences or paragraphs which are copied unaltered must be enclosed in quotation marks and referenced by a number. Material which is not reproduced unaltered should not be in quotation marks but must still be referenced. It is not sufficient to list the sources of information at the end of the report; you must indicate the sources of information individually within the report using the reference numbering system.

Information that is not referenced is assumed to be either common knowledge or your own work or ideas; if it is not, then it is assumed to be plagiarised i.e. you have knowingly copied someone else's words, facts or ideas without reference, passing them off as your own. This is a **serious offence**. If the person copied from is a fellow student, then this offence is known as collusion and is equally serious. Examination boards can, and do, impose penalties for these offences ranging from loss of marks to disqualification from the award of a degree

This warning applies equally to information obtained from the Internet. It is very easy for markers to identify words and images that have been copied directly from web sites. If you do this without acknowledging the source of your information and putting the words in quotation marks then your report will be sent to the Investigating Officer and you may be called before a disciplinary panel.

FINALISING THE REPORT AND PROOFREADING

Your report should now be nearly complete with an introduction, main text in sections, conclusions, properly formatted references and bibliography and any appendices. Now you must add the page numbers, contents and title pages and write the summary.

THE SUMMARY

The summary, with the title, should indicate the scope of the report and give the main results and conclusions. It must be intelligible without the rest of the report. Many people may read, and refer to, a report summary but only a few may read the full report, as often happens in a professional organisation.

- Purpose - a short version of the report and a guide to the report.
- Length - short, typically not more than 100-300 words
- Content - provide information, not just a description of the report.

PROOFREADING

This refers to the checking of every aspect of a piece of written work from the content to the layout and is an absolutely necessary part of the writing process. You should acquire the habit of never sending or submitting any piece of written work, from email to course work, without at least one and preferably several processes of proofreading. In addition, it is not possible for you, as the author of a long piece of writing, to proofread accurately yourself; you are too familiar with what you have written and will not spot all the mistakes.

When you have finished your report, and before you staple it, you must check it very carefully yourself. You should then give it to someone else, e.g. one of your fellow students, to read carefully and check for any errors in content, style, structure and layout. You should record the name of this person in your acknowledgements.

Word processing / desktop publishing

Advantages	**Disadvantages**
Word processing and desktop publishing packages offer great scope for endless revision of a document. This includes words, word order, style and layout.	Word processing and desktop publishing packages never make up for poor or inaccurate content
They allow for the incremental production of a long document in portions which are stored and combined later	They can waste a lot of time by slowing down writing and distracting the writer with the mechanics of text and graphics manipulation.
They can be used to make a document look stylish and professional.	Excessive use of 'cut and paste' leads to tedious repetition and sloppy writing.
They make the process of proofreading and revision extremely straightforward	**If the first draft is word processed, it can look so stylish that the writer is fooled into thinking that it does not need proofreading and revision!**

Two useful tips;

- Do not bother with style and formatting of a document until the penultimate or final draft.
- Do not try to get graphics finalised until the text content is complete.

USEFUL LINKS

http://www.ndt-ed.org/GeneralResources/Report/TechReport.htm

http://www.sussex.ac.uk/ei/internal/forstudents/engineeringdesign/studyguides/techreportwriting

9

WRITING A TECHNICAL PROPOSAL

A technical proposal, often called a "Statement of Work," is a persuasive document. Its objectives are to

1. Identify what work is to be done

2. Explain why this work needs to be done

3. Persuade the reader that the proposers (you) are qualified for the work, have a plausible management plan and technical approach, and have the resources needed to complete the task within the stated time and cost constraints.

What makes a good proposal? One attribute is *appearance*. A strong proposal has an attractive, professional, inviting appearance. In addition, the information should easy to access.

A second attribute is *substance*. A strong proposal has a well-organized plan of attack. A strong proposal also has technical details because technical depth is needed to sell your project.

Remember: A proposal is a persuasive document.

SOME PRELIMINARIES

As you get started, make sure you understand the definition we're using for proposals. Also, make sure you understand the proposal assignment—not to write just any proposal but one that, at least in part, proposes to write something.

Real proposals

To begin planning a proposal, remember the basic definition: a proposal is an offer or bid to do a certain project for someone. Proposals may contain other elements—technical background, recommendations, results of surveys, information about feasibility, and so on. But what makes a proposal a proposal is that it asks the audience to approve, fund, or grant permission to do the proposed project.

If you plan to be a consultant or run your own business, written proposals may be one of your most important tools for bringing in business. And, if you work for a government agency, nonprofit organization, or a large corporation, the proposal can be a valuable tool for initiating projects that benefit the organization or you the employee-proposer (and usually both).

A proposal should contain information that would enable the audience of that proposal to decide whether to approve the project, to approve or hire you to do the work, or both. To

write a successful proposal, put yourself in the place of your audience—the recipient of the proposal—and think about what sorts of information that person would need to feel confident having you do the project.

It's easy to get confused about proposals, or at least the type of proposal you'll be writing here. Imagine that you have a terrific idea for installing some new technology where you work and you write up a document explaining how it works and why it's so great, showing the benefits, and then end by urging management to go for it. Is that a proposal? No, at least not in this context. It's more like a feasibility report, which studies the merits of a project and then recommends for or against it. Now, all it would take to make this document a proposal would be to add elements that ask management for approval for you to go ahead with the project. Certainly, some proposals must sell the projects they offer to do, but in all cases proposals must sell the writer (or the writer's organization) as the one to do the project.

TYPES OF PROPOSALS

Consider the situations in which proposals occur. A company may send out a public announcement requesting proposals for a specific project. This public announcement—called a request for proposals (RFP)—could be issued through newspapers, trade journals, Chamber of Commerce channels, or individual letters. Firms or individuals interested in the project would then write proposals in which they summarize their qualifications, project schedules and costs, and discuss their approach to the project. The recipient of all these proposals would then evaluate them, select the best candidate, and then work up a contract.

But proposals come about much less formally. Imagine that you are interested in doing a project at work (for example, investigating the merits of bringing in some new technology to increase productivity). Imagine that you visited with your supervisor and tried to convince her of this. She might respond by saying, "Write me a proposal and I'll present it to upper management." As you can see from these examples, proposals can be divided into several categories:

- *Internal, external.* If you write a proposal to someone within your organization (a business, a government agency, etc.), it is an *internal* proposal. With internal proposals, you may not have to include certain sections (such as qualifications), or you may not have to include as much information in them. An *external* proposal is one written from one separate, independent organization or individual to another such entity. The typical example is the independent consultant proposing to do a project for another firm. (The proposal that begins on page is an example of an internal proposal; the one beginning on page is an example of an external proposal.)

- *Solicited, unsolicited.* If a proposal is *solicited*, the recipient of the proposal in some way requested the proposal. Typically, a company will send out requests for

proposals (RFPs) through the mail or publish them in some news source. But proposals can be solicited on a very local level: for example, you could be explaining to your boss what a great thing it would be to install a new technology in the office; your boss might get interested and ask you to write up a proposal that offered to do a formal study of the idea. *Unsolicited* proposals are those in which the recipient has not requested proposals. With unsolicited proposals, you sometimes must convince the recipient that a problem or need exists before you can begin the main part of the proposal. (The proposal that begins on page is an example of an unsolicited proposal; the one beginning on page is an example of a solicited proposal.)

TYPICAL SCENARIOS FOR THE PROPOSAL

It gets a bit tricky dreaming up a good technical report project and then a proposal project that proposes at least in part to write that report. Here are some ideas:

- Imagine that a company has some sort of problem or wants to make some sort of improvement. It sends out a request for proposals; you receive one and respond with a proposal. You offer to come in, investigate, interview, make recommendations—and present it all in the form of a report.

- Some organization wants a seminar in your expertise. You write a proposal to give the seminar—included in the package deal is a guide or handbook that the people attending the seminar will receive.

- You want to write a business prospectus for the kind of business you intend to start up. Imagine that you want a top-quality prospectus and don't have the time or expertise to prepare one; therefore, *you* send out request for proposals to professional consultants. You change hats and pretend you are Business Startup Consultants, Inc., and send your other self a proposal to do the job. Your proposal accepted, you (as Business Startup Consultants, Inc.) write the prospectus.

- Some agency has just started using a fancy desktop-publishing system, but the documentation is giving people fits. You receive a request for proposals from this agency to write some sort of simplified guide or startup guide.

COMMON SECTIONS IN PROPOSALS

The following is a review of the sections you'll commonly find in proposals. Don't assume that each one of them has to be in the actual proposal you write, nor that they have to be in the order they are presented here—plus you may discover that other kinds of information not mentioned here must be included in your particular proposal.

As you read the following on common sections in proposals, check out the example proposals starting on page . Not all of the sections discussed in the following will show up in the examples, but most will.

Introduction. Plan the introduction to your proposal carefully. Make sure it does all of the following things (but not necessarily in this order) that apply to your particular proposal:

- Indicate that the document to follow is a proposal.
- Refer to some previous contact with the recipient of the proposal or to your source of information about the project.
- Find one brief motivating statement that will encourage the recipient to read on and to consider doing the project.
- Give an overview of the contents of the proposal.

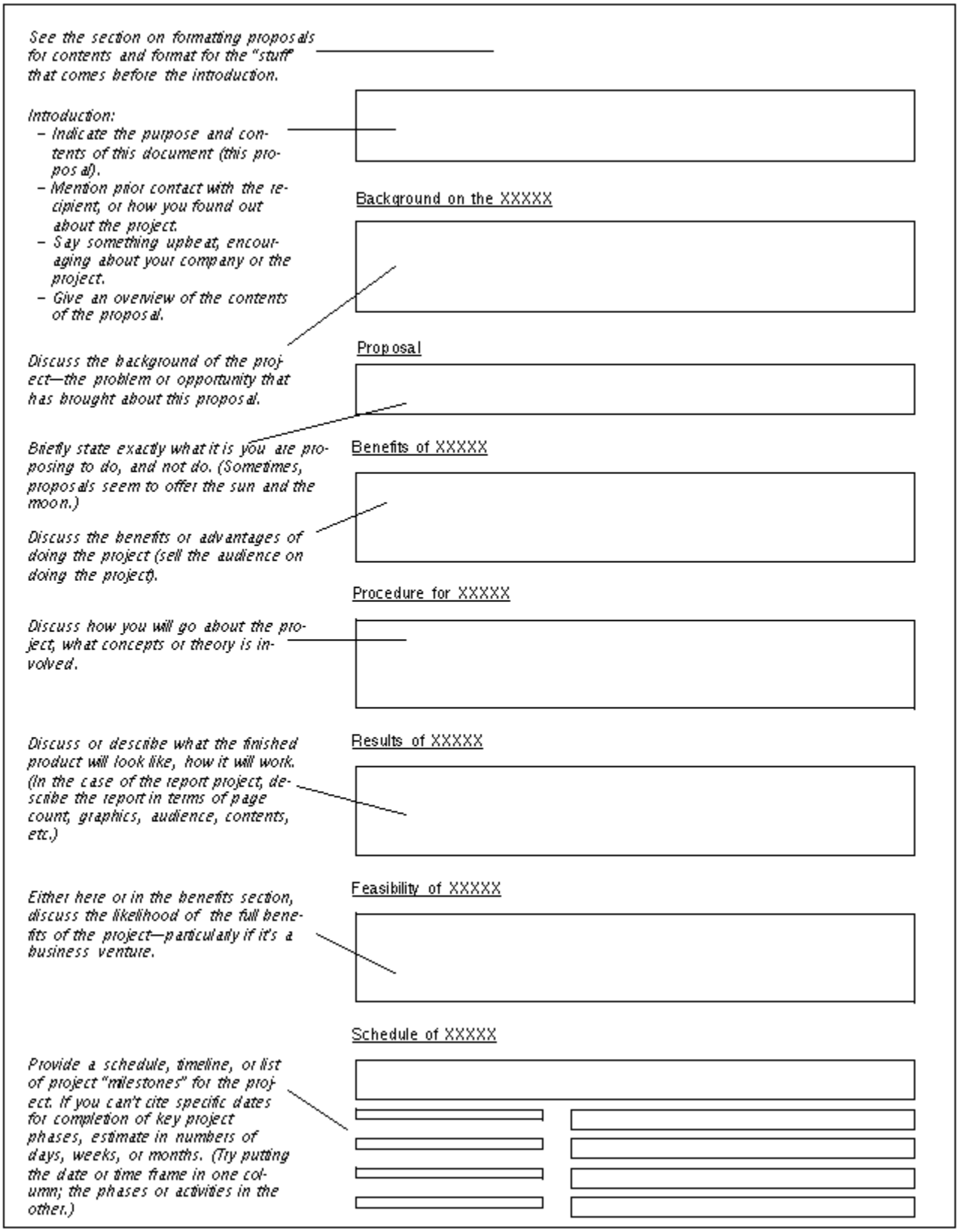
Now remember: you may not need *all* of these elements, and some of them can combine neatly into single sentences. The introduction ought to be brisk and to the point and not feel as though it is trudging laboriously through each of these elements.

Take a look at the introductions in the first two example proposals listed at the beginning of this chapter, and try to identify these elements.

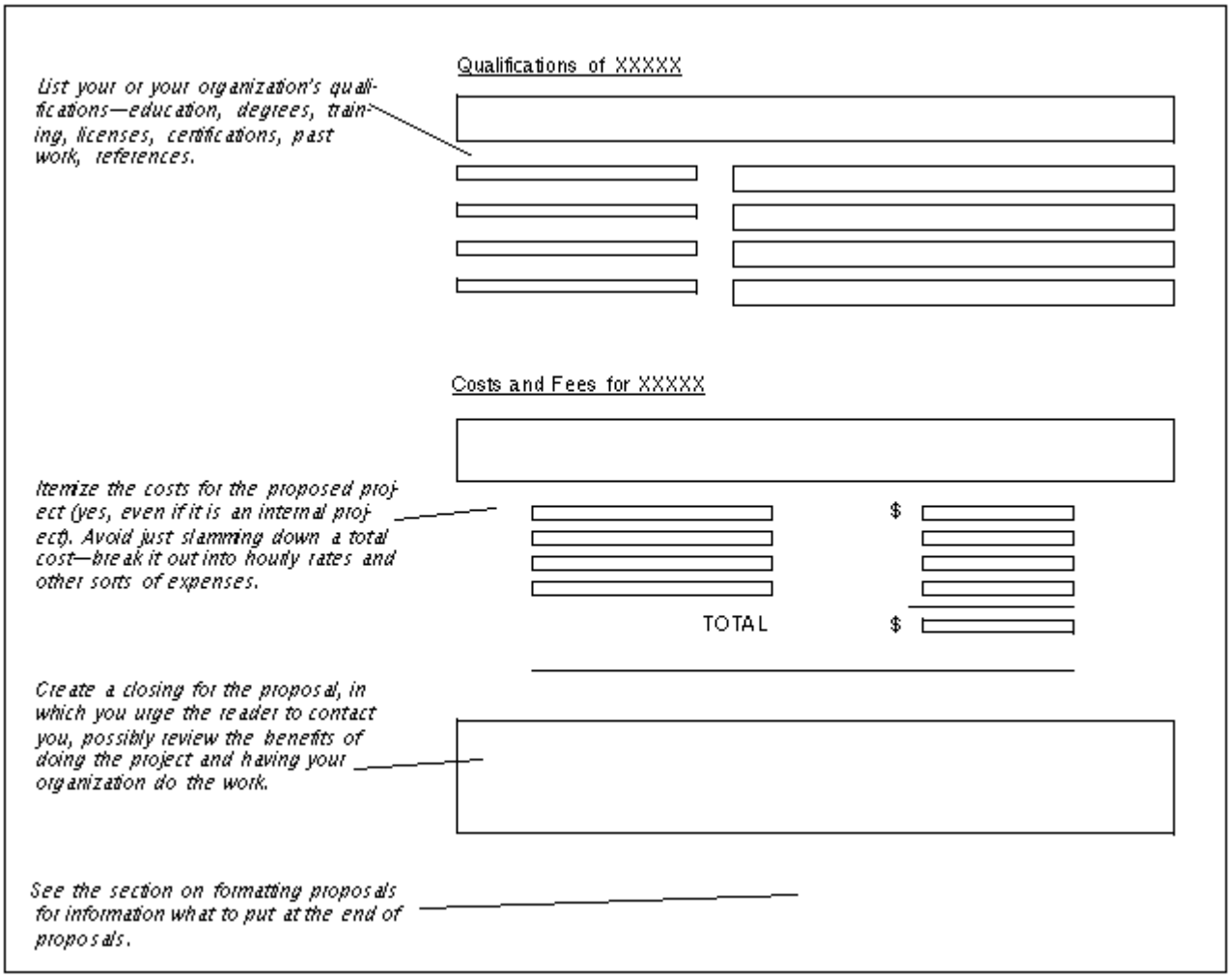
Background on the problem, opportunity, or situation. Often occurring just after the introduction, the background section discusses what has brought about the need for the project—what problem, what opportunity there is for improving things, what the basic situation is. For example, management of a chain of daycare centers may need to ensure that all employees know CPR (maybe new state guidelines have been enacted about CPR certification). An owner of pine timber land in east Texas may want to get the land productive of saleable timber without destroying the ecology. (The section entitled "Need for a Wellness Program," in example proposal 1 (listed at the beginning of this chapter) is a good example of this.)

It's true that the audience of the proposal may know the problem very well, in which case this section might not be needed. Writing the background section still might be useful, however, in demonstrating your particular view of the problem. And, if the the proposal is unsolicited, a background section is almost a requirement—you will probably need to convince the audience that the problem or opportunity exists and that it should be addressed.

Benefits and feasibility of the proposed project. Most proposals discuss the advantages or benefits of doing the proposed project. This acts as an argument in favor of approving the project. Also, some proposals discuss the likelihood of the project's success. In the forestry proposal, the proposer is recommending that the landowner make an investment; at the end of the proposal, he explores the question of what return there will be on that investment, how likely those returns are. In the unsolicited proposal, this section is particularly important—you are trying to "sell" the audience on the project.



Schematic view of proposals. Remember that is a typical or common model for the contents and organization—many others are possible.



Schematic view of proposals—continued. Remember too that each of the specific sections shown here may not be necessary in your proposal and that the order shown here may not be entirely right for your proposal.

Description of the proposed work (results of the project). Most proposals must describe the finished product of the proposed project. In this course, that means describing the written document you propose to write, its audience and purpose; providing an outline; and discussing such things as its length, graphics, binding, and so forth.) In the scenario you define, there may be other work such as conducting training seminars or providing an ongoing service. Add that too.

Method, procedure, theory. In most proposals, you'll want to explain how you'll go about doing the proposed work, if approved to do it. This acts as an additional persuasive element; it shows the audience you have a sound, well-thought-out approach to the project. Also, it serves as the other form of background some proposals need. Remember that the background section (the one discussed above) focused on the problem or need that brings about the proposal. However, in this section, you discuss the technical background relating to the procedures or technology you plan to use in the proposed work. For example, in the forestry proposal, the writer gives a bit of background on how timber management is done.

Once again, this gives you the proposal writer a chance to show that you know what you are talking about, and build confidence in the audience that you are a good choice to do the project.

Schedule. Most proposals contain a section that shows not only the projected completion date but also key milestones for the project. If you are doing a large project spreading over many months, the timeline would also show dates on which you would deliver progress reports. And if you can't cite specific dates, cite amounts of time or time spans for each phase of the project. (See the examples of the schedule section in the examples proposals listed at the beginning of this chapter.

Qualifications. Most proposals contain a summary of the proposing individual's or organization's qualifications to do the proposed work. It's like a mini-resume contained in the proposal. The proposal audience uses it to decide whether you are suited for the project. Therefore, this section lists work experience, similar projects, references, training, and education that shows familiarity with the project. (See the examples of the qualifications section in the examples proposals listed at the beginning of this chapter.)

Costs, resources required. Most proposals also contain a section detailing the costs of the project, whether internal or external. With external projects, you may need to list your hourly rates, projected hours, costs of equipment and supplies, and so forth, and then calculate the total cost of the complete project. With internal projects, there probably won't be a fee, but you should still list the project costs: for example, hours you will need to complete the project, equipment and supplies you'll be using, assistance from other people in the organization, and so on.

Conclusions. The final paragraph or section of the proposal should bring readers back to a focus on the positive aspects of the project (you've just showed them the costs). In the final section, you can end by urging them to get in touch to work out the details of the project, to remind them of the benefits of doing the project, and maybe to put in one last plug for you or your organization as the right choice for the project.

Special project-specific sections. Remember that the preceding sections are typical or common in written proposals, not absolute requirements. Similarly, some proposals may require other sections not discussed above. Don't let your proposal planning be dictated by the preceding discussion. Always ask yourself what else might my audience need to understand the project, the need for it, the benefits arising from it, my role in it, my qualifications to it What else might my readers need to be convinced to allow me to do the project? What else do they need to see in order to approve the project and to approve me to do the project?

ORGANIZATION OF PROPOSALS

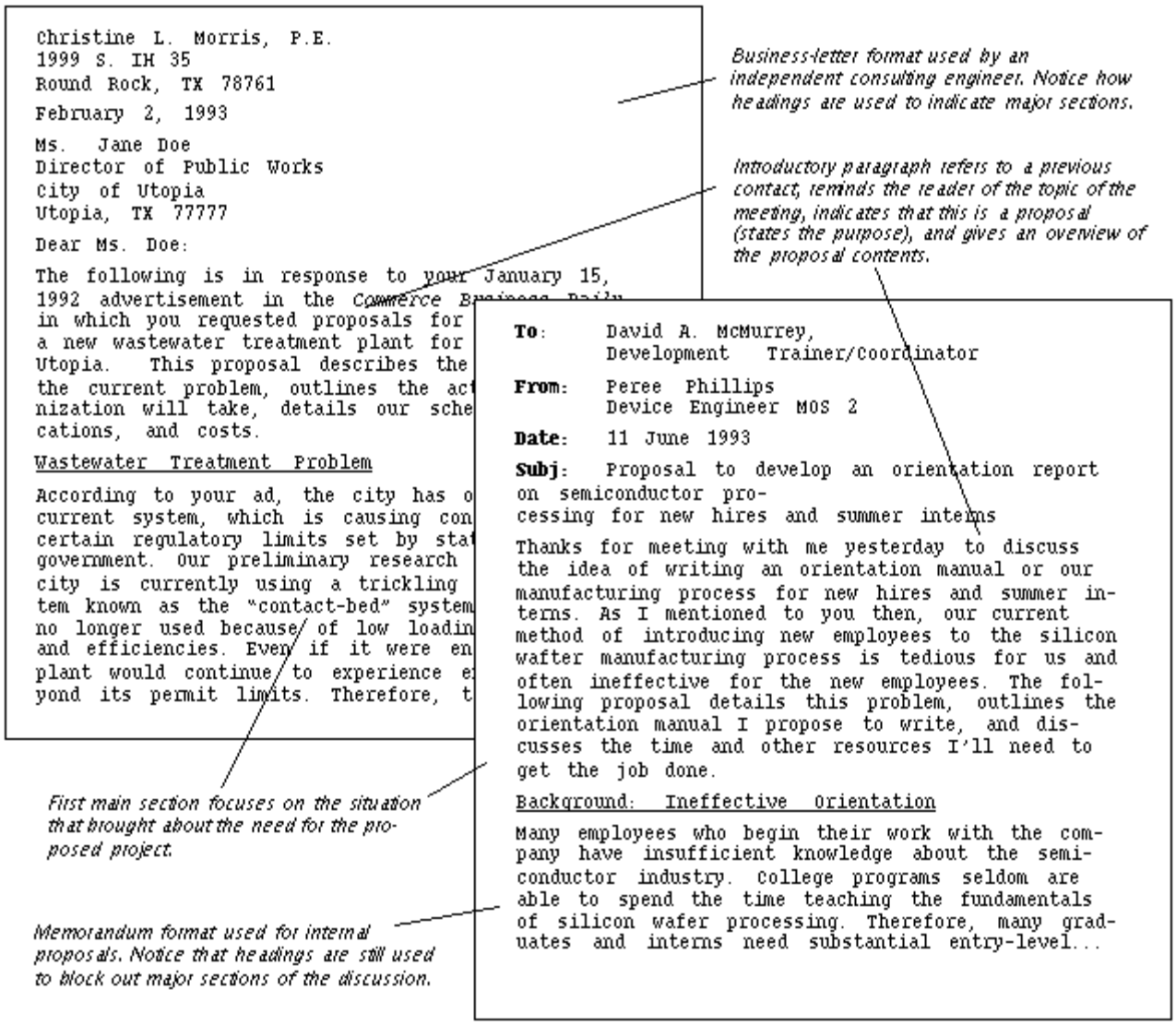
As for the organization of the content of a proposal, remember that it is essentially a sales, or promotional kind of thing. Here are the basic steps it goes through:

1. You introduce the proposal, telling the readers its purpose and contents.
2. You present the background—the problem, opportunity, or situation that brings about the proposed project. Get the reader concerned about the problem, excited about the opportunity, or interested in the situation in some way.
3. State what you propose to do about the problem, how you plan to help the readers take advantage of the opportunity, how you intend to help them with the situation.
4. Discuss the benefits of doing the proposed project, the advantages that come from approving it.
5. Describe exactly what the completed project would consist of, what it would look like, how it would work—describe the results of the project.
6. Discuss the method and theory or approach behind that method—enable readers to understand how you'll go about the proposed work.
7. Provide a schedule, including major milestones or checkpoints in the project.
8. Briefly list your qualifications for the project; provide a mini-resume of the background you have that makes you right for the project.
9. Now (and only now), list the costs of the project, the resources you'll need to do the project.
10. Conclude with a review of the benefits of doing the project (in case the shock from the costs section was too much), and urge the audience to get in touch or to accept the proposal.

Notice the overall logic of the movement through these section: you get them concerned about a problem or interested in an opportunity, then you get them excited about how you'll fix the problem or do the project, then you show them what good qualifications you have—*then* hit them with the costs, but then come right back to the good points about the project.

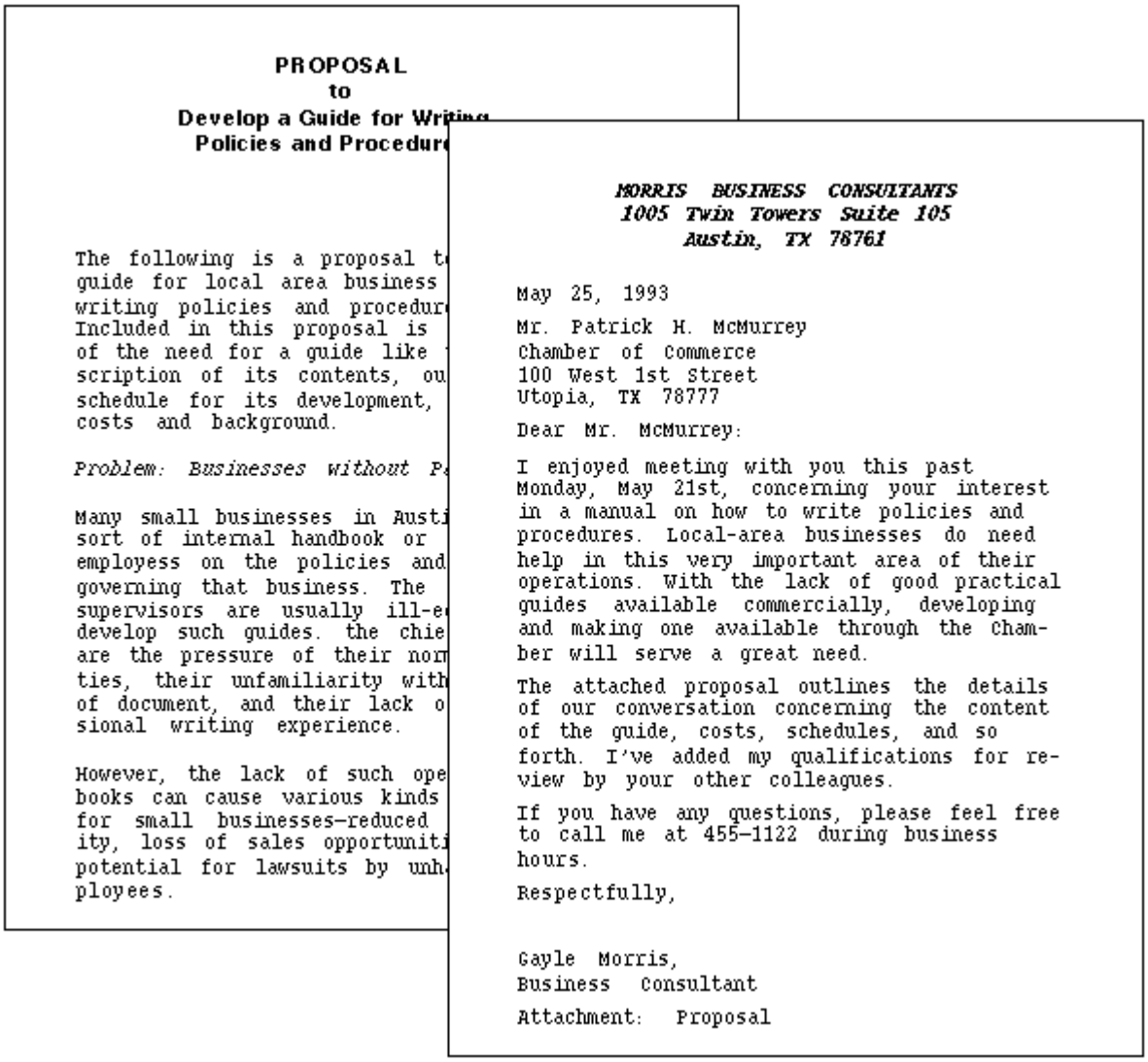
FORMAT OF PROPOSALS

You have the following options for the format and packaging of your proposal. It does not matter which you use as long as you use the memorandum format for internal proposals and the business-letter format for external proposals.



Excerpts from two proposals, one internal, the other external. These examples integrate the cover letter (or memo) and the proposal proper into one continuous document.

- ***Cover letter with separate proposal:*** In this format, you write a brief "cover" letter and attach the proposal proper after it. The cover letter briefly announces that a proposal follows and outlines the contents of it. In fact, the contents of the cover letter are pretty much the same as the introduction (discussed in the previous section). Notice, however, that the proposal proper that follows the cover letter repeats much of what you see in the cover letter. This is because the letter may get detached from the proposal or the recipient may not even bother to look at the letter and just dive right into the proposal itself. (This format is illustrated in below.)



PROPOSAL
to
Develop a Guide for Writing
Policies and Procedure

The following is a proposal t
guide for local area business
writing policies and procedur
Included in this proposal is
of the need for a guide like
scription of its contents, ou
schedule for its development,
costs and background.

Problem: Businesses without P

Many small businesses in Austi
sort of internal handbook or
employess on the policies and
governing that business. The
supervisors are usually ill-e
develop such guides. the chie
are the pressure of their nor
ties, their unfamiliarity with
of document, and their lack o
sional writing experience.

However, the lack of such ope
books can cause various kinds
for small businesses-reduced
ity, loss of sales opportuniti
potential for lawsuits by unh
ployees.

MORRIS BUSINESS CONSULTANTS
1005 Twin Towers Suite 105
Austin, TX 78761

May 25, 1993

Mr. Patrick H. McMurrey
Chamber of Commerce
100 West 1st Street
Utopia, TX 78777

Dear Mr. McMurrey:

I enjoyed meeting with you this past Monday, May 21st, concerning your interest in a manual on how to write policies and procedures. Local-area businesses do need help in this very important area of their operations. With the lack of good practical guides available commercially, developing and making one available through the Chamber will serve a great need.

The attached proposal outlines the details of our conversation concerning the content of the guide, costs, schedules, and so forth. I've added my qualifications for review by your other colleagues.

If you have any questions, please feel free to call me at 455-1122 during business hours.

Respectfully,

Gayle Morris,
Business Consultant

Attachment: Proposal

Excerpts from a proposal that uses a cover letter. The proposal proper uses a title at the top of the page and repeats some of the contents of the cover letter (in case the letter is separated from the proposal). A cover memo would work the same way as the business letter does in this example.

- ***Cover memo with separate proposal****:* In this format, you write a brief "cover" memo and attach the proposal proper after it. The cover memo briefly announces that a proposal follows and outlines the contents of it. In fact, the contents of the cover memo are pretty much the same as the introduction (discussed in the previous section). The proposal proper that repeats much of what's in the cover memo. This is because the memo may get detached from the proposal or the reader may not even bother to look at the memo and just dive right into the proposal itself. (See the illustration above and just picture the letter reformatted as a memo.)

- ***Business-letter proposal:*** In this format, you put the entire proposal within a standard business letter. You include headings and other special formatting

elements as if it were a report. (This format is illustrated in the left portion of a previous illustration.)

- ***Memo proposal:*** In this format, you put the entire proposal within a standard office memorandum. You include headings and other special formatting elements as if it were a report. (This format is illustrated in the right portion of a previous illustration.)

CHECKLIST FOR PROPOSAL WRITING

Here's a checklist of what to include somewhere in the proposal:

- ***Audience:*** Describe the audience of the proposal and the proposed report (they may be different) in terms of the organization they work for, their titles and jobs, their technical background, their ability to understand the report you propose to write.

- ***Situation:*** Describe the intended audience of the proposal: who they are, what they do, what their level of knowledge and background on the proposal topic is. Describe the situation in which the proposal is written and in which the project is needed: what problems or needs are there? who has them, where are they located?

- ***Report type:*** Explain what type of report you intend to write: is it a technical background report? a feasibility report? Provide enough explanation so that your instructor can see that you understand the type of report.

- ***Information sources:*** List information sources; make sure you know that there is adequate information for your topic; list specific books, articles, reference works, other kinds of sources that you think will contribute to your report.

- ***Graphics:*** List the graphics you think your report will need according to their *type* and their *content*. (If you can't think of any your report would need, you may not have a good topic—do some brainstorming with your instructor.)

- ***Outline:*** Include an outline of the topics and subtopics you think you'll cover in your report.

REVISION CHECKLIST FOR PROPOSALS

As you reread and revise your proposal, watch out for problems such as the following:

- Make sure you use the right format. Remember, the memo format is for internal proposals; the business-letter format is for proposals written from one external

organization to another. (Whether you use a cover memo or cover letter is your choice.)

- Write a good introduction—in it, state that this is a proposal, and provide an overview of the contents of the proposal.

- Make sure to identify exactly what you are proposing to do.

- Make sure that a report—a written document—is somehow involved in the project you are proposing to do. Remember that in this course we are trying to do two things: write a proposal and plan a term-report project.

- Make sure the sections are in a logical, natural order. For example, don't hit the audience with schedules and costs before you've gotten them interested in the project.

- Break out the costs section into specifics; include hourly rates and other such details. Don't just hit them with a whopping big final cost.

- For internal projects, don't omit the section on costs and qualifications: there will be costs, just not direct ones. For example, how much time will you need, will there be printing, binding costs? Include your qualifications—imagine your proposal will go to somebody in the organization who doesn't know you.

- Be sure and address the proposal to the real or realistic audience—not your instructor. (You can use your instructor's name as the CEO or supervisor of the organization you are sending the proposal to.)

- Watch out for generating technobabble. Yes, some of your proposal readers may know the technical side of your project—but others may not. Challenge yourself to bring difficult technical concepts down to a level that nonspecialists can understand.

- Be sure to include all the information listed in "Special assignment requirements." If it doesn't logically or naturally fit in the proposal itself, put it in a memo to your instructor.

SAMPLE TECHNICAL PROPOSAL

I.

Heading: This proposal is internal so is written as a memo. Use a letter for proposals written outside the company.	**Date:**May 1, 2012 **To:** Sheila Campbell, Computer Resources Project Leader **From:** Mary Silvers, VITR Project Manager

The subject line is important. Summarize the message in 10 words or less.

Re: Proposal to upgrade CAD computer systems

SUMMARY

Provide background

As you know, H.J.R. has just won the contract from Emory Bros., Inc., to provide them with detailed drawings that graphically display all the machinery that produces titanium in their plant. This contract is very important for the future health of our company as you are aware. In order to provide a quality end product, our department will need to upgrade its nine computers immediately.

State the proposal in one or two sentences.

Tell how your plan accomplishes the work you propose to do.

Our current computers are running AutoCAD Rel.12, but we must upgrade to Rel.16 which Emory Bros. is supplying to our staff. Our computers do not have sufficient memory or speed to accommodate this new AutoCAD version. The new AutoCAD software requires 21 inch monitors so that our designers can see the detail that the software generates.

Summarize your plan to accomplish the goal.

Our computer technician, Sharon Jones, has explored the various computer options and has chosen the Val-U-Mate computers as the most cost-effective and reliable for meeting the contract requirements. We propose that our company immediately purchase nine of these computers sytems for our staff.

DESCRIPTION

In the Description, first provide all the technical information.

Technical Information

To meet the requirements of the contract, H.J.R. will need new computer systems that still keep costs in the budget.

Computer Specifications: The computers that will run AutoCAD Rel. 16 must have a minimum of:

- Pentium III processor
- 20 Gigabite Hard Drive
- 128 MB SDRAM
- 8XMax DVD-ROM Drive

Monitor Specifications: The AutoCAD requires monitor that:

- measures 21 inchs
- are compatible with a 32MB AGP Graphics Card

After carefully researching the many computers that fit our specifications and budget, we found that the Val-U-Mates were

superior in all categories.

Computer Committee

Next tell who will do the work. Complete resumes are necessary when writing proposals that will be read by another company.

Sharon Jones, H.J.R. network supervisor, was the head of the selection committee. The other members of the selection committee were Bob Anderson, lead design engineer, and Andy White, Project Supervisor. All three members have been company employees for at least eight years.

Schedule

To avoid any confusion about when each part of the work will occur, include a schedule. If the project is extensive, use a Gantt chart and insert it in this section.

Obviously, we need the computers before we can begin any computer work on the contract. Val-U-Mate has promised us next-day-delivery as soon as they get the order. Because we have a few preliminary details to take care of before we are ready to start the project, we can wait a week before we need the computers. Emory Bros., Inc., had already delived AutoCAD Rel.16 to our office. Our schedule follows:

Event	**Date Needed**
Purchase Computers	Mon., May 8
Deliver Computers:	Wed., May 10
Assemble Computers:	Thurs., May 11
Load and Test Software:	Fri., May 12
Begin Contract Work:	Mon., May 15

Cost

Include the costs and any other financial considerations in this section.

A chart detailing each computer, the technical details, and cost is included in the Appendix. A summary follows:

Item	**Cost**	**Number Needed**	**Total Cost**
Computer:	$2399	9	$21591
Monitor:	$420	9	$3780
Zip Disks:	$6	200	$1200
Total Cost:			$26571

CONCLUSION

The Conclusion ends in a positive tone. After the Conclusion add pages that could include:

- Resumes of all people working

We are very excited about the new contract with Emory Bros., Inc. This opportunity to apply our design skill and drafting expertise to a

on the contract
- History or background of your company
- Any schedule charts or cost lists that were not in the body of the proposal
- Summaries of any related projects you have already completed for other groups
- A list of optional work or add-ons that you could provide.

challenging project is very exciting. Delivering our final drawings to Emory Bros. will open the door to future work of this kind not only from their company but also from other companies who are looking for similar products. With our upgraded hardware, we look forward to aggressively bidding on other RFPs. We are proud that our department is able to contribute substantially to the continued financial health of H.J.R.

II.

Sample Proposal

Project Summary

Organization:	**Monterey Bay High School**
Applicant Name:	Ted Watson
P.I.:	Ariel Jane Lichwart
Address:	590 Foam Street, Monterey, CA 93940
Telephone Number:	Ted: (831) 244-7843, Ariel: (831) 244-7842
Email Address:	Ted: Twatson@mbhs.edu, Ariel: Ajl@mbhs.edu
Partner:	Carmel River Watershed Council
Area of Interest:	**"Meaningful" Outdoor Experiences for Students**
Project Title:	A Meaningful Outdoor Experience for Students: To Monitor the Health of the Carmel River and Carmel Watershed
Project Period:	09/01/2003 – 10/31/2004

Project Objectives:

- To provide a meaningful outdoor experience for all of the 650 students at Monterey Bay High School;
- To assess the environmental quality and health of the Carmel River and the impact these problems have on the entire watershed and the larger ecological system;
- To teach the students how to monitor fish traps, conduct water quality tests, measure stream flow, operate plant surveys, perform bird density measurements (point counts), sample invertebrate and plankton tows, and perform herpetology surveys along the River;
- To assist local agencies that are concerned with the health of the Carmel River, to maintain existing populations and to assist in restoring those that are in decline through habitat restoration work, community-based education programs and increased local involvement in environmental projects;
- To raise the student's social awareness, stimulate observation, motivate critical thinking, and develop problem-solving skills.

Summary of Work:	To provide high school students with Meaningful Outdoor Experiences by assessing the environmental quality and health of the Carmel River and Watershed.
Total Federal Funds:	**$50,000**
Cost Sharing:	**$25,643**
Total Project Costs:	**$75,643**

10

READING GRAPHIC INFORMATION/TRANSCODING

Transcoding is often used to convert one format into another. Charts, technical diagrams, and maps may be clear to the designer or author, but readers often have difficulty discerning a meaning.

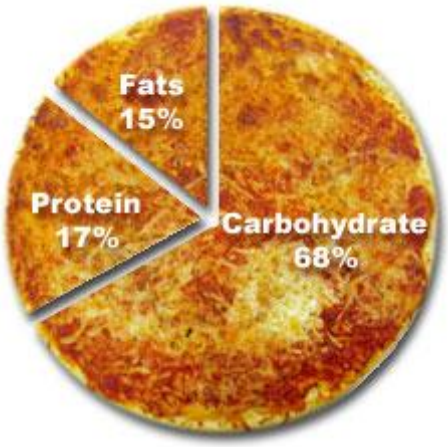
DIFFERENT TYPES OF CHARTS AND GRAPHS ANF TABLES

Graphs are used to express numeric information as visual comparisons. Graphs are most effective when comparing extremes. If you are not comparing data, then don't use a chart. Graphs should be extremely clear. Make labels and legends easy to read. Legends, or keys, should use colors or patterns with great contrast. Remember, some readers are color blind.

Pie Charts

Pie charts show how parts relate to a whole.

Use **pie charts** to compare parts of a whole. If the data do not add up to 100 percent, then a pie chart is not acceptable. Pie charts are popular because of their unique appearance.

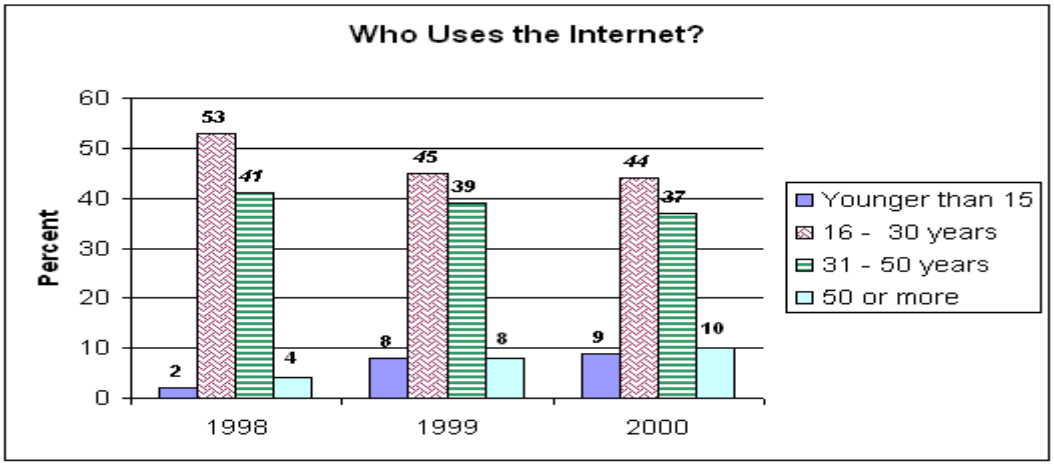


The Food We Eat

Notice that the chart includes percentiles next to each slice, as well as a legend key. We could have included how many people were surveyed and how many chose each flavor. However, that would violate the primary guideline for charting data: keep it simple to read.

Bar Graphs

Bar Graphs compare different categories that are commonly measured in the same manner and relate directly to each other. Incomes, test scores, and production levels might be charted using bar graphs.

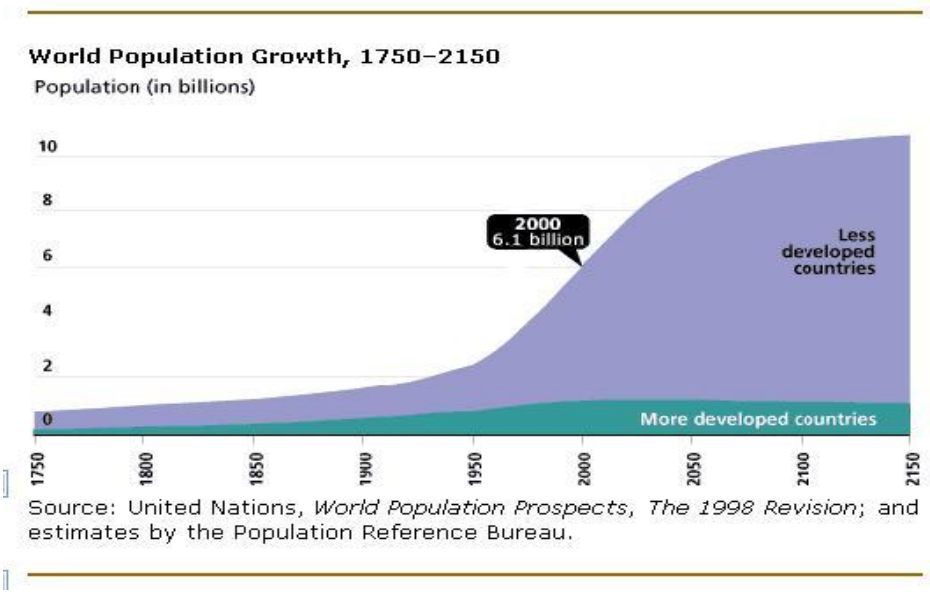


Line Charts

Line charts illustrate trends.

Trends are charted in **line graphs**. When charting one measured value for a single category using three or more datapoints, use a line graph. An example of one measured value is the average income of in-house designers. Comparing two years, a bar graph is acceptable. While measuring three or more years, use a line chart.

Data charted using a bar graph often belongs in a line chart. Line charts illustrate trends with better clarity than other graphs.



Process diagrams

Companies shipping products to several countries like to use **process diagrams**. Process diagrams are instructions with as few words as possible. There are a lot of bad process diagrams.

Advanced process diagrams feature several branches, meeting along a main chain of events. Several processes might be taking place concurrently. The results of these steps eventually are combined. A car manufacturer, for example, might have three or four assembly lines, which eventually converge to make a car.

Flow Charts

Computer programmers are, usually, familiar with *flow charts*. Flow charts trace decision making and logic. Standardized symbols indicate input, choices, and output.

Flow charts work well as diagrams of corporate policies, as well. We've seen hospitals use flow charts to help nurses follow procedures. If certain criteria are met, specific treatments are given to a patient.

Tables

Tables make information easier to analyze. Graphs are based upon tables.

Tables organize data for better analysis. Tables place related values in columns and rows. There might be times when a table accompanies a graph.

Maps

Use maps only in extreme emergencies. Many readers cannot understand them. Charts are difficult for some people. Maps are impossible for many. When you use a map, be sure it is easy to read and understand.

Technical drawings

Good technical drawing fall between artwork and infographics. Technical drawings reveal how a machine or other object is assembled. Anatomy books contain really great technical drawings.

WRITING ABOUT GRAPHS/ CHARTS/ TABLES: OVERVIEW

Before you Begin

Underline key words. Write related words – turn nouns into verbs, verbs into nouns, adjectives into adverbs, etc. Write opposite words, similar words, synonyms, etc.

Circle and highlight the graph. Use arrows. Make notes. Circle the biggest, the smallest, stable or unchanging parts, sudden increases, etc.

Identify trends. A trend is the overall idea of the graph

- what is happening/what happened
- the main change over time
- the most noticeable thing about the graph
- the pattern over time
- the pattern for different places or groups or people.

Most graphs will have two trends, or there will be two graphs with a trend in each. You could write about the two trends in two separate paragraphs. Make sure you have identified the trends in the graph. If you don't, you can't get IELTS Band 6.

While you Write: Layout

Introduction

- First sentence: Describe the graph. You can use some slightly different words or word forms from those on the question paper, but be careful to give the full information. Start "The graph shows"
- Second sentence: This gives the trend or trends. You can put two trends in this sentence or only one – you could keep the other one for the conclusion. Start "Overall, …"

Paragraph 1: Trend 1

- Start with a sentence with no number. “City size increased sharply over the period.” “The most obvious trend in the graph is that women are having fewer babies.” “Oil production has increased slightly in all the countries in the graph”
- Follow this sentence with an example (sentence with number) and perhaps another example (another sentence with number). Keep alternating.

Paragraph 2: Trend 2

- Start with a sentence with no number. “City size increased sharply over the period.”
- Give an example (sentence with number) and perhaps another example (Sentence with number)

Conclusion

- Finish by repeating the main trends, or identify a second trend. Use different vocabulary.
- Don’t have any numbers in the conclusion (you could use words like “most”, “the majority” “a minority”, “a small number”).
- Don’t give an opinion.

While You Write: Some Don’ts

- Don’t describe the X and Y axis. Give the information.
- Don’t write about everything on the graph. Pick the biggest, the smallest, the main points, the main trends. Group similar things together
- Don’t write about the line or the bar: “The line went up,” “The bar went down.” Instead, write about the idea. “The number of people going to work by train increased gradually.” “Oil production shot up in 1965”
- Make sure you write about the idea. Don’t use shorthand: “Men went up.” “Women went down.” Instead, write about the real data: “The number of men at university fell dramatically,” “The percentage of female students getting a degree rose suddenly.”
- Don’t use “I feel”, “as I have written,” “as you can see,” etc. Keep it academic. In IELTS, you can give your opinions in Task 2. In Task 1 (writing about a graph or visual data) you just report what you see.
- Don’t start sentences with But, So, Also, And, For, Since, Because, Although
- It’s good to think about four paragraphs. It will help you to organize your writing. So go ahead and write four paragraphs, or at least three (intro, body, conclusion).

Word Length and Sentence Length

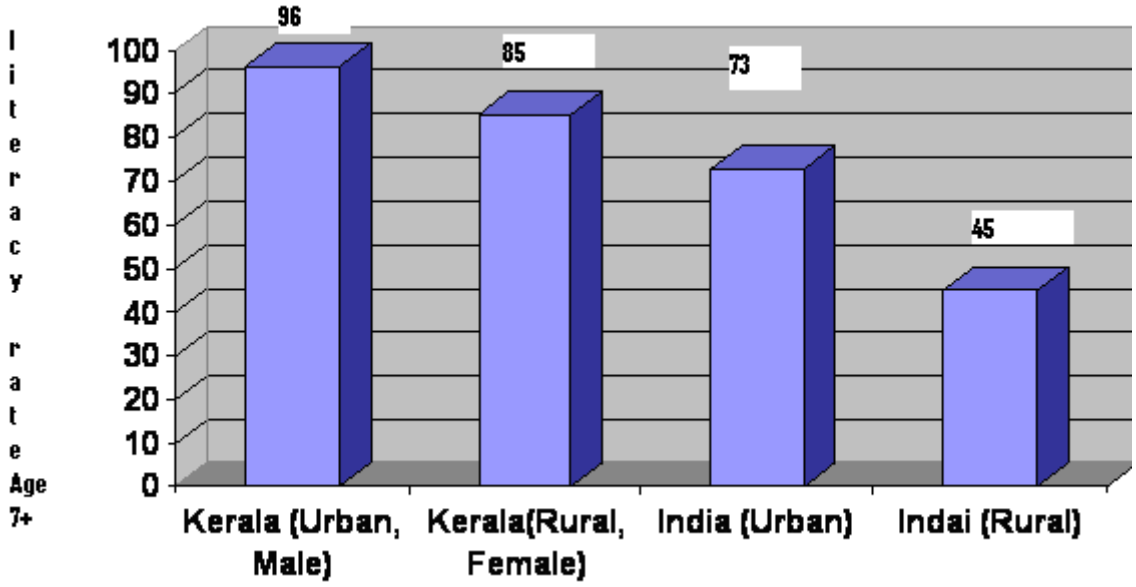
Make sure you have 150 words. You should have some short sentences (about 6-10 words) and some long ones (12-18) words, but your average should be about 12 or 13 words per sentence.

A sentence without a number will usually be short. Use a mix – a sentence without a **number followed by a sentence or two with a number.**

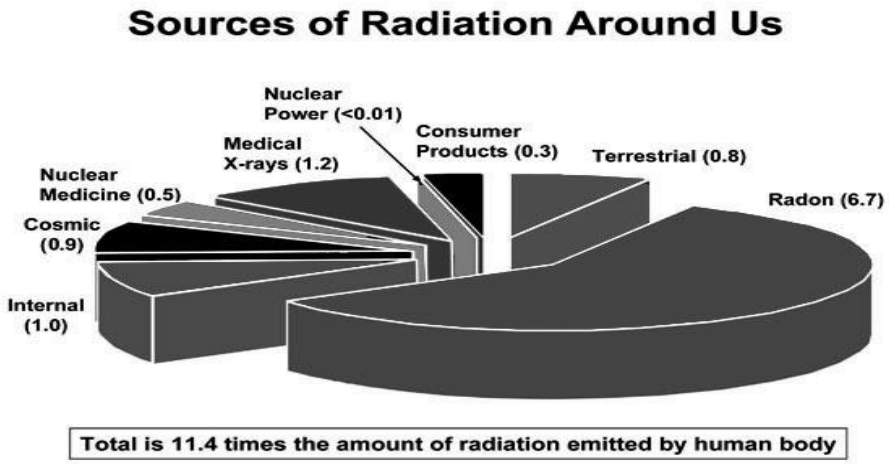
PRACTICE:

Transcode the following:

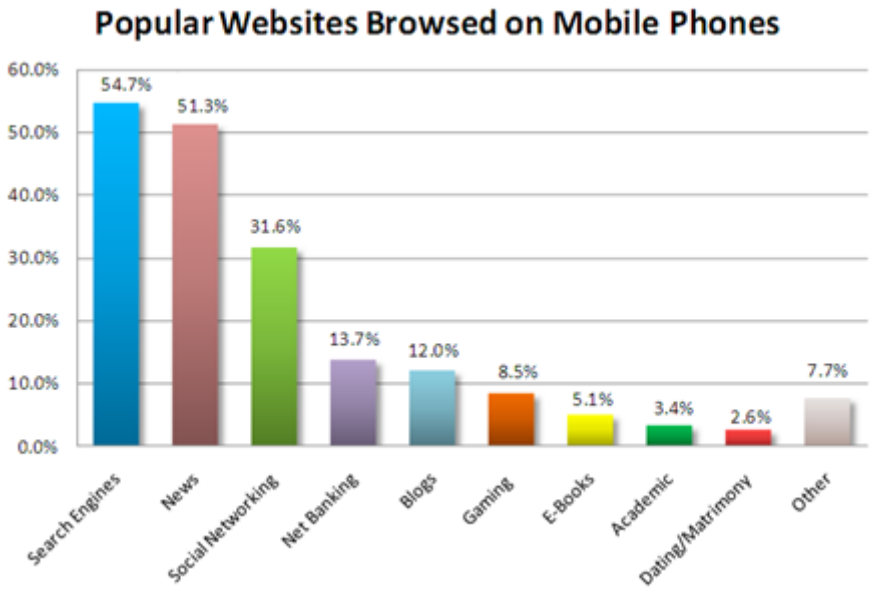
1. Literacy Rates: Social, Regional Disparities



2.



3.



4. India GDP - real growth rate

YEAR	GDP-GROWTH RATE
2003	4.30%
2004	8.30%
2005	6.20%
2006	8.40%
2007	9.20%
2008	9.00%
2009	7.40%
2010	6.50%

11

MEETING AGENDAS AND MEETING MINUTES

Agendas and minutes are before and after pictures of the same event. The agenda documents who was invited and the meeting's intent, and the minutes document who attended and what happened.

MEETING AGENDAS

Distribute meeting agendas before the meeting. This lets the participants know the purpose of the meeting, how long it may take, and whether they need to prepare materials and/or information. Depending on the subject matter, an agenda can help even an informal meeting be more productive.

The agenda should include the following:

1. Date, place, start time and, if possible, expected end time
2. List of participants
3. Purpose/Objective
4. Issues to be discussed
5. Items to be presented

Include materials for review along with the agenda, or distribute them well ahead of the meeting so people have time to review the material before they need to comment. This saves time and reduces the possibility of needing a follow-up meeting on the same subject. The following is a sample agenda for an internal meeting of multiple authors preparing a planning study:

Agenda: Authors Meeting to prepare for XXX Reference Manual

Date: June 17, 2012
Time: 1-2 pm
Location: Building X, Conference Room Y
Participants: Name 1…
Name 2…
Name 3…

Purpose: To discuss roles and timeline for development of XXX Reference Manual

If you cannot attend, please notify <Name> by the end of day on June 15.

1. Introductions: 5 minutes
2. Review contribution assignments, file location, style guide, timelines: 15 minutes
3. Review data and source materials, identify gaps: 20 minutes
4. Determine strategy to obtain missing data: 15 minutes
5. Schedule next meeting: 5 minutes

MEETING MINUTES

Meeting minutes document what occurred at the meeting. They are not an opportunity to present a position or to add new materials and comments.

The format should follow the agenda closely, including:

1. Date, time, and place of meeting
2. Names of those in attendance
3. Purpose of the meeting
4. Each issue addressed and highlights of the discussion
5. A notation of any materials handed out at the time
6. Outcome or decisions made (if an agreement was made to meet again, note place and time of next meeting)

For most meetings, simply documenting the topics discussed and decisions reached should be sufficient. The following is a sample of the meeting minutes that corresponds to the above Always attach copies of materials distributed at the meeting or note where to find them. Since minutes are often reviewed months or years later, it is important to have access to supporting documents with the minutes.

Minutes of Authors Meeting to prepare for XXX Planning Study
Date: June 17, 2012

Present: Name 1…
Name 2…
Name 3…
Next meeting: None scheduled

All authors met to determine the roles, responsibilities, and timeline for their contribution to the XXX Planning Study. <Name> is managing this project. <Name> introduced the contributors, and provided the URL for the Division style guide, as well as hard copy of the Document Review Checklist.

Agreements and assignments from this meeting are as follows:
1. All authors will complete the Checklist and attach it with their draft submissions.
2. All authors agreed to meet the attached schedule of deliverables.
3. The project editor, <Name>, will contact authors weekly to remind them of due dates.
4. <Name> is responsible for obtaining the missing data from xxx.
5. We do not anticipate the need to meet again as a group until after delivery of the draft report.
6. <Name> will schedule the next meeting after consulting with all authors by email after the draft report is complete.

12

RESUME WRITING

WHAT IS A RÉSUMÉ?

Your résumé provides employers with an introduction to you, your skills and experience. Presentation and the type of information included can often determine whether or not you will be offered an interview. An employer will use your résumé to determine if your skills, experiences and interests match their job specifications.

PURPOSE OF A RÉSUMÉ?

Think of your résumé as a marketing tool. You are "selling" your skills, knowledge and experience to an employer in return for an interview. It is essential to match your qualifications to the position you are seeking. Your résumé should provide the employer with a brief overview of your educational and career experiences in a concise, easy to read manner. Remember that your résumé is a personal, unique document and many different styles and formats can be used to make your résumé stand out!

1. Identification Information: Name, present & permanent addresses and phone numbers as well as email address.

2. Professional Objective - Your objective is an essential component of your résumé because it will help you determine the theme of your résumé. It should be a brief, but specific, statement of the type of position you are seeking or your defined intent. An objective is not a long-term goal; it should refer to a specific position and industry segment.

If you are not certain of your objective, you are not alone! However, you should still be able to determine your best option at present and write an accompanying objective. If you have several career interests, you may need to produce several different résumés.

3. Educational Background - Academic information should be listed in reverse chronological order, with your most recent degree first. High school information should not be included, unless it is particularly applicable. You may wish to list your cumulative grade point average and/or your major G.P.A. if it is a 3.0 or above. Include study abroad programs in this section. You may also wish to include courses taken beyond your major which specifically relate to the career field you are applying. This section should include:

(1) The name of school attended and city and state in which the school is located;

(2) The name of degree and year of graduation. If you are currently working towards the degree, the term 'Candidate' or 'Anticipated' should be used with the expected year of graduation.

4. Work Experience - This section can include paid, full and part-time positions, volunteer work and internships. For each experience, list the name of the organization, city and state where it is located, job title and dates of employment. Although there is no single correct order in which to describe experiences, you should be consistent. However, more recent

experiences can be potentially more appealing to employers when listed first. Briefly describe each experience using action-oriented language. Emphasize skills and accomplishments gained from these experiences, not just duties. Statements should be bulleted, avoid using paragraphs and lengthy sentences to highlight tasks, duties and achievements.

The format of this section includes:

♦ The dates of employment; month and year started to month and year ended.

♦ The organization you were employed by and the city and state where it's located.

♦ The job title of the position you held.

♦ Bulleted statements detailing your job tasks, responsibilities, skills and achievements.

OPTIONAL CATEGORIES

Honors/Awards - Academic honors such as Dean's List, scholarships, selection for an academic honorary or other special types of recognition can be listed in a separate category or combined with the Education Section. Do not include a long list of every recognition you have ever received, select only those that are most important and relevant to your objective.

Related Coursework - If you are applying for a position in which you have taken classes which may directly affect your qualifications, this section could strengthen your candidacy. You may also include any special research projects you have been involved with which may provide the employer with additional insight into your professional abilities and training.

Special Skills - In this section, include any expertise you have in foreign languages, computer abilities, technical writing or other areas of excellence that have not been mentioned elsewhere.

Professional Affiliations - List memberships to professional associations related to your career area.

Co-curricular or Community Activities - This section indicates and reflects your willingness to accept responsibility and leadership roles and demonstrates to the employer your attempt to broaden your background with activities outside of the classroom. List involvement in clubs, activities, social organizations, and athletics. Include positions of leadership and offices held. Avoid abbreviations when possible.

DO NOT INCLUDE

Personal Information - Personal data such as height, weight, date of birth, social security number, marital, and health status are not to be mentioned on your resume. This information can be used for discriminatory purposes and is inappropriate for the employer to ask about during an interview or job offer. If it does not specifically relate to how well you can do the job, leave it out.

Political, Religious, or Social Affiliations - These types of activities may also be potentially used for discriminatory purposes. If you are not concerned with the effect of listing such affiliations, leave them on. If you are concerned, create a generic description for the activity such as "religious organization" for Methodist, Catholic, Jewish, Buddhist, etc. organizations.

COMPUTER INSTRUCTION

These instructions are for students using Microsoft Word:

Margins: Click on File, then on Page Setup - You can change your margins to accommodate the amount of text you have in your résumé. You can adjust down to .5 if necessary, though between that and .75 is usually adequate.

Tabs: Set a tab, (or use the default tab settings) to form your margin after your headings.

If you use the space bar, your résumé will not be aligned when you print. To set a tab, click on the "L" in the left corner of the screen (located by the ruler guides) and then left click on the ruler where you want the tab(s) set.

Font: Scroll through the various sections to find the font that you like best. The font you use should be easy to read and not too ornate. A commonly used font is Times New Roman - it looks professional and it enables you to fit a lot of characters on one line. To view your options, click Format on the main tool bar, then on Font.

Paper: Regular paper is fine for your own copies. In most other cases you will want to use a quality, heavier, bond paper - be conservative with the color: white, beige, tan, gray, so that an employer may subsequently photocopy or fax it on to others involved in the hiring process. Your letters, résumé and references should all be printed on the same paper.

Bullets: Click on the bullet icon. To change the style of bullet, highlight your bullets, then click on format, bullets and numbering. A box will pop up with bullet style options.

Printing: It is important to work with one computer lab to format your résumé. Each lab has different printers and constantly switching labs can offset your layout, and alter your tabs. Easily corrected, it is still more efficient to use one lab. Also, you should use a laser printer to ensure quality copies of your résumé.

RÉSUMÉ TIPS

1. Résumés should be brief - ONE page! Two pages may be acceptable if your background warrants using two full pages to describe your educational background and experience.

2. For bullets, begin each statement with a past tense action verb, unless you list a current job

3. Do not use the pronouns "I, me, or my" in any section of your résumé.

4. Use abbreviations sparingly. Spell out the name of the college and organizations to which you belong.

5. Be honest. Employers will ask you specific questions about information presented on your résumé.

6. Your résumé should be FLAWLESS. Spelling and grammar should be perfect, punctuation should be consistent. Any mistakes could eliminate you from the applicant pool.

7. Your résumé should have a professional appearance and be visually appealing: Use proper spacing and adequate margins: content should be balanced on the page. DO NOT PHOTOCOPY.

8. Essential information should be evident. Employers will take ~30 seconds to initially scan your résumé.

9. Use bolding, underlining, italics and CAPS to draw attention to important points.

10. Produce your résumé with a laser printer to ensure that it has clear, sharp type. Résumé should be laser printed on quality bond paper. Do not use flashy colors, unusual or odd-sized paper.

11. If mailing a résumé, it should always be accompanied by a cover letter on matching bond paper.

12. Professional staff and Career Assistants are available for consultation and additional help

SCANNABLE RÉSUMÉS

A scannable résumé is similar to a conventional résumé in that it is a record of your occupational credentials and experience. However, these résumés are specifically designed to be read (scanned) by a computer. The best way to ensure that a computer will accept your resume is to lay it out in a format that is easy for the scanner to read.

Length

An e-résumé should be two pages in length. You will need to use a paperclip if you opt for two pages-NO STAPLES.

Paper

For a scannable résumé, the best option is white copy paper. As always, send the original. In addition, it is best to send your résumé unfolded and flat in a large envelope for scanning purposes.

Font and graphics

11–12 point, basic typeface such as Arial is preferable. Scanners work best with simplicity so avoid the use of: italics, underlining and fancy typefaces, columns, shading, and boxes.

On the other hand, virtually all scanners can accept and understand bold lettering. However, it is recommended that you confine your bold typeface (and CAPS) to the major sections of your résumé.

A Key Word Preface or Summary

Computers read résumés by looking for “key” words. These key words are normally nouns or short phrases. This key word summary will also describe the knowledge, skills, abilities and experience that the employer must see in a person’s résumé in order to consider them a qualified/valuable candidate. To get a feel for the key words that an employer might want to see in your résumé, check the recruitment ads for your field in the CDC or the local paper.

Résumé Worksheet

NAME

PRESENT ADDRESS PERMANENT ADDRESS

_____ _____

_____ Email _____

_____ _____

_____

OBJECTIVE

_____

EDUCATION

College / University

Major, May _____

G.P.A.: if above 8.0

STUDY ABROAD

_____

_____

HONORS

_____

_____

RELEVANT COURSEWORK

_____

_____

EXPERIENCE

_____

_____

_____

ACTIVITIES/LEADERSHIP

_____
_____

_____

_____

VOLUNTEER

_____
_____

SKILLS

Computer_____

Language_____

TRAVEL

_____

TYPES OF RESUME

Resumes tend to follow one of two organizational approaches: the archival and the functional approach.

Archival Approach: Organizes the resume according to education and work experiences, highlighting a job seeker's qualification in a few areas. It may be organized in sections such as

- Name and contact information
- Career objective / career summary
- Educational background
- Relater work experience
- other work experience
- Skills
- Awards and activities
- References

Example

Name

Address line 1 Phone - Home

Address line 2 Mobile

Place, Pincode E-mail

Career Objective

A position as a ____ , specializing in_____, working for _____ company that specializes in _____

Educational Background

Bachelor of _____, VIT University, Expected _____(month) _____(year).

Major:

Minor:

GPA:

Work Experience:

Intern: December 2012 - March 2013

- Work experience
- List duties with bullets

Field Technician: May 2012 – July 2012

Skills

Computer Experience :

_____

_____

Machinery :

_____

_____

Communication Skills

_____

_____

Awards and Memberships

- Best innovator
- Member IEE

References available upon request

Functional Approach – Organizes the resume according to your talents, abilities, skills and accomplishments. It will be organized into sections such as Leadership, Design Experience, Communication skills, and training abilities.

Name

Address line 1

Address line 2

Place, Pincode

Mobile

Phone - Home

E-mail

Objective : _____ position in a firm that specializes in _____ projects.

Leadership Experience:

- Managed a design team for ...
- Led planning ...
- Awarded ...for.....

Technical Expertise:

- Experienced in the latest developments in computer-aided drafting hardware and software.
- Able to resolve building and zoning codes while preparing site plans.

Community involvement:

- Founding member of ...
- Served as Architect Public involvement committee ...

Employment History:

- Name of Firm, Position, Department, Duty assigned, 2013
- Name of Firm, Position, Department, Duty assigned,2010

Educational Background:

B.E ,Major, University, 2013Professional Membership:

- IEE
- Others

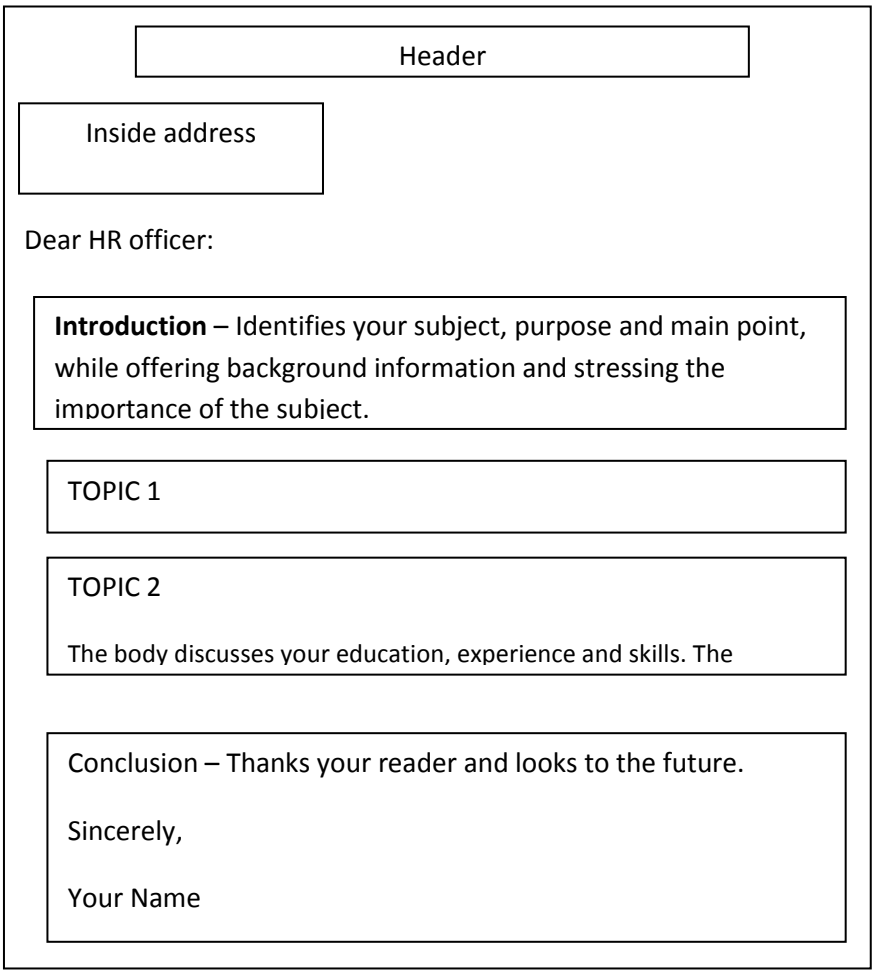
References available upon request

13

WRITING EFFECTIVE APPLICATIONS

THE BASIC PATTERN OF AN APPLICATION LETTER

An application letter includes the common features of a letter, like a head, inside address, introduction, body and salutation.



A Letter of Application Emphasizing Education

January 29, 2013

Add line 1,
Add line 2,
Place – pin code

Mr. John
Human Resource Manager
Company Name,
Add line 1,
Add line 2,
Place – pin code

Dear Mr. John,

I would like to apply for the Organic Agronomist position you advertised through Hotjobs.com on January 19. My experience with organic innovations in plant and soil science as well as my minor in entomology would allow me to make an immediate contribution to your company.

Opening paragraph states the subject purpose and main point. Education is discussed up front with examples.

My education and research as an organic agronomist would benefit your company significantly. As a Plant and soil Science major at _____ University, I have been studying and researching environmentally alternatives to pesticides. Specifically, my mentor, Prof. George Roberts, and I have been working on using benevolent insects, like ladybird beetles, to control common pests on various vegetable plants. We have also developed several verities of organic insecticidal soaps that handle the occasional insect infestation.

Work experience is used to show potential contribution to employer.

I also worked as an intern for Brighter Days Organic Cooperative, a group of organic farmers who have operations similar to Sunny View. From your website, I see that you are currently working towards certification as an organic farm. At Brighter Days I wrote eleven agronomic plans for farmers who wanted to change organic method. My work experience in the organic certification process would be helpful for earning certification for Sunny View in the shortest amount of time.

Other skills are highlighted to show unique ablity.

Finally I would bring two other important skills to your company: a background in farming and experience in public speaking. I grew up on a farm near_____,Country. When my father died my mother and I kept the farm going by learning how to operate machinery, plant crops, and harvest. We decided to go organic in 2001; because we suspected that my father's death was due to chemical exposure. Based on our experience with going organic I have given numerous public speeches and workshops for farmers through the Govt. of India. My farming background and speaking skills will be an asset to your farming background.

Conclusion ends with a positive note and offers contact information.

Thank you for this opportunity to apply for your opening. I look forwarded to hearing from you about this exciting position. I can be

contacted at home (0009112345) or through e-mail (peterpan@hotmail.com).

Sincerely,

Peter

A Letter of Application Emphasizing Work Experience

January 29, 2013

Add line 1,
Add line 2,
Place – pin code

Mr. John
Human Resource Manager
Company Name,
Add line 1,
Add line 2,
Place – pin code

Dear Mr. John:

Last week, you and I met at the University – Times Job fair. You mentioned that Fairmont Plastics may be interviewing entry-level chemical engineers this spring to work on applications of polymeric materials. If a position becomes available, I would like to apply for it. With my experience in applied rehology and polymeric materials, I would be a valuable addition to your company.

Opening paragraph uses background information to make personal connection.

My work experience includes two summers as a co-op at Vertigo Plastics, a company similar in size, products, and services to Fairmount. My responsiblites included inspecting and trouble shooting the plant's machinery . I analyzed the production process and reported on the performance of the plant's operations.While at Vertigo I learned to work with other chemical engineers in a team-focused environment.

Work experience with co-op is highlighted.

My education in chemical engineering at _____ University, would allow me to contribute a thorough understanding of plastics engineering to Fairmount. In one of the best programmes in the country, I have excelled in courses in thermo dynamics, chemical process design, and chemical process materials. In addition my work in the University's state of art chemical laborites has prepared me to do the prototype building and vacuum forming that is a specialty in your company. I also have experience working with the CAD/ CAM systems that your company uses.

Paragraph on education makes connections to employers needs.

The enclosed resume highlights my other qualities. I enjoyed speaking with you at the job fair and I would appreciate an opportunity to talk to you again at opportunities at Fairmount. If you would like to schedule an interview please call me at 0091-123456 or or through e-mail (peterpan@vit.ac.in).

Conclusion indirectly requests interview.

Sincerely

Peter.

Enclosure : Resume

14

GROUP DISCUSSION

Group discussions occur in many different formats – from very informal ones between friends to highly structured and challenging discussions included as part of a selection process. In both cases, there are a number of specific skills that we can help our students develop to become better able to contribute effectively to group discussions.

WHY TEACH GROUP DISCUSSION SKILLS?

Developing group discussion skills is useful for everyday life as we regularly find ourselves having discussions amongst friends, family and colleagues. These may vary from very informal chats about day-to-day things, to more serious topics, for example a discussion about a recent news story or a problem that needs to be solved.

- Additionally, group discussions are increasingly being used in the job market during interviews and selection procedures. These can take a variety of formats, but the key skills remain very similar.

- Last but not least, group discussions offer an opportunity for extended speaking (and listening!) practice by all of the contributors. Group discussion practice and skill development is therefore useful for all students.

TYPES OF DISCUSSION

There are a variety of different types of discussions that occur naturally and which we can recreate in the classroom. These include discussions where the participants have to:

- ***Make decisions*** (e.g. decide who to invite to a party and where to seat them)

- ***Give and / or share their opinions on a given topic*** (e.g. discussing beliefs about the effectiveness of capital punishment)

- ***Create something*** (e.g. plan and make a poster as a medium for feedback on a language course)

- ***Solve a problem*** (e.g. discussing the situations behind a series of logic problems)

Some discussion topics may fall into more than one of these categories, but it is useful to consider a variety of formats to which the students can apply the skills they are learning.

USEFUL SUB-SKILLS FOR STUDENTS

There are a number of different sub-skills which students will need to be able to successfully and effectively participate in a group discussion. Students need to develop the ability to:

Analyse

This skill can be developed by giving students the topic individually and asking them to

brainstorm or mind-map all of the possible sub-topics they could speak about. The students can then swap their notes and assess or analyse the relevance of each of the sub-topics their partner has included. Together, the students then draw up a fresh list or mind-map and discuss how the sub-topics might be linked together, along with examples or reasons for any arguments they might have.

Persuade

This skill comes in useful when students need to make decisions on how to do something (e.g. which candidate should get a job). A fun activity to develop this skill is to give groups of students this topic and ask them to decide on the profile of the perfect candidate, creating a list of 7 adjectives. The students are then re-grouped and asked to persuade the other members of the group that their selection is the best while compiling a second, negotiated list. The group members who retain the most from their original lists are the winners. Note down useful phrases that you hear the students using while doing this task and discuss these at the end for future reference.

Control emotions

This can be practised by giving the students a fairly controversial topic, such as 'Friends are more important than family' and asking the students to decide whether they agree, disagree or have no opinion, making notes on their main arguments to support their viewpoint. Divide the students into groups ensuring that there is a mix of views within each group. Explain that for this discussion, the aim is to keep their voices low and try to control their emotions as far as possible. Monitor and give feedback on these areas.

Support

One of the most important things for this skill is for students to learn when it is and isn't appropriate to interrupt and how to do it. Very often students will talk over each other in an effort to get their point across and forget to listen.

To practise this, you can get your students to make a list in small groups of when it is and isn't appropriate to interrupt other speakers. They should include things like 'not appropriate during the middle of a point, if the speaker has not said very much previously, or when you are feeling angry and liable to say something you'll regret'. It is appropriate when the speaker has been dominating the discussion for too long, what the speaker is saying is completely irrelevant to the topic, or you don't understand the point he / she has made'.

You can then give them or elicit a list of phrases which they might use to interrupt politely (e.g. 'Can i just add something here?', 'Sorry I'd just like to clarify something,' etc.) The students then write five of these on slips of paper (one per slip) and have a group discussion on a given topic. The aim is to use all of the language on their slips. When they have used a phrase, they put the slip in the middle of the table. The other students in the group judge whether the interruption was appropriate / polite. If not, they take the slip back and try again.

Use functional language

Depending on the types of group discussions that you plan to do with your class, it is useful

to draw up a list of useful functional language for the students to refer to. This could include phrases for functions such as 'Giving reasons', 'Giving your opinion', 'Agreeing and disagreeing', etc. You can either make up the list yourself and distribute it or get the students to do this. For each group discussion, you can then refer them to the appropriate section of the list and give them a few moments to consider the language before beginning the discussion.

SETTING UP GROUP DISCUSSIONS

There are several key things to consider when setting up group discussions in the classroom to ensure that they run successfully.

- Give the students some **planning time** either individually or in small groups. Don't just give them the topic and say 'go'! It is often useful to discuss some associated vocabulary or functional language that they might find useful

- **Choose topics** which you are confident your students will find interesting.

- Get them to brainstorm some ideas for discussions they would like to do and use this as a starting point

- **Ensure a balance** between input and practice

- Use a **variety of styles** / types

- **Vary group size** and procedure
  Some companies do selection group discussions with very large groups of people – over ten in some cases. If your students will be facing these types of group discussions in the future make sure they get some practice doing them. It can also be useful to mix classes of students so they have practice doing discussions with people they don't already know.

- Encourage **group discussions outside** class time
  Give students some extra feedback forms to use to give each other input on how they perform in group discussions outside of class.

GIVING AND ENCOURAGING FEEDBACK

Feedback can take several forms and it is a good idea to vary the way it is given. Students can observe each other doing group discussions and give each other feedback on the specific areas of input that you have covered (ideally using a feedback form that you have created).

- Additionally, students can do a 'Reflective group feedback exercise' where at the end of the group discussion they discuss how effective each of the participants was during the discussion. Again, giving them some focused questions to guide this stage will help them.

- You could also try video-taping the group discussions and playing sections of these back to the class to analyse. Some students find this extremely useful.

- Finally, monitor the groups yourself and make notes for feedback on whole groups or individual performances. Keeping a record of these will help you and the students to see where they have improved.

CONCLUSION

As we have seen, group discussions can take a variety of formats and are useful for all types of students. They can be done in preparation for job interviews or as extended speaking practice simply to increase fluency.

It is important to consider the different sub-skills that are involved in participating in a group discussion and ensure that you do activities that address each of these. Additionally, structuring and varying the way that feedback is given will help the students to identify areas for improvement.

15

ORAL PRESENTATION SKILLS

Speech is one of the three fundamental communication modes. The ability to communicate through ***effective*** speaking is as important to language skill development as is the ability to write effectively. Competent, effective speaking is perhaps one of the best money-making skills a person can acquire. Such skills are important whether we are involved in casual conversation, explaining how to operate a machine to a fellow student, presenting a paper to a group of colleagues in a technical meeting, or attempting to convince your employer that you are grossly underpaid.

ORGANIZATION

An oral presentation consists of three main parts: the introduction, body, and conclusion.

The Introduction

An introduction is a must. It "sets the scene" and engages the audience by motivating them to listen by relating the topic to their interests. The simplest introduction—merely letting the audience know who you are and what your presentation is going to be about—is inadequate for most audiences, topics, and assignments.

Although a well-crafted introduction should be "succinct, " it should provide the audience with several pieces of information:

- Who you are and an accurate pronunciation of your name;
- Your qualifications to speak about the subject;
- The type of presentation (informational, instructional, problem-solving, etc.);
- Background information as needed;
- Your thesis;
- A preview of the the main ideas to be covered in the body;
- The procedure(s) to be followed during the presentation.

The purpose of an introduction is to quickly build rapport with your audience and gain their attention. You want the audience to be able to easily follow your thought process as you lead them into the body of the presentation.

The Body

The main part of the presentation is the body. The body must expound, explain, support, and defend the thesis revealed in the introduction. All main points must be covered. Use examples and illustrations for statements that are difficult for the audience to understand. Graphic illustrations and other visual aids not only help to clarify your message, but also add color and credibility.

The Conclusion

The presentation should conclude with a well-planned ending. The following four points should be considered as you plan your ending.

- **Summary**: A clear summary of your purpose and main points will insure that the audience gets the big picture. It should answer the question, "So what?", telling the audience what was important about the information you conveyed. Use the same key words used in the body and make a fresh, brief, and concise re-statement of your case. This helps to drive your main points home and insures that your listeners have a clear understanding of your intentions.
- **Emotional Response:** If your speech is designed to arouse an emotional reaction, plan to make a strong appeal in the conclusion.
- **Recommendations**: If your presentation includes a recommendation, particularly one requiring action on the part of the audience, state it clearly as part of your ending. Plan the precise words you will use in your recommendation. Let your audience know***exactly*** what you want them to do.
- **Exit line:** Do not flounder at the end. Make a crisp statement and end your presentation on a positive note. Plan and memorize the ending statement, then use it.

DELIVERY METHODS

There are at least four methods for making an oral presentation. The best of these is the extemporaneous method; the worst is the impromptu method. *The Toolworks Dictionary* [CD ROM] defines *extemporaneous* (adj.) as "spoken with . . . preparation but not written out or memorized" and *impromptu* (adj.) as "without preparation or advance thought; offhand." In between these two are the memorization method and the reading method.

The **extemporaneous** method involves significant effort but results in a degree of quality that tells your audience that you care about them. It requires

- The detailed laying out of the presentation from beginning to end.
- Doing your homework to fill in your knowledge gaps.
- The use of 3 x 5 cue cards or similar method to jog your memory on specifics and keep your presentation on track.

The **impromptu** method is characterized by poor organization and incompleteness. It tells the audience that you are indifferent about them. The **memorization** method is risky; you can lose your place or leave something out and, in a panic, you might revert to the impromptu method, resulting in disaster. Finally, the **reading** method might be acceptable if you are presenting a discourse on some technical topic about which you lack expertise. An example could be in presenting a paper at a technical meeting for a colleague who might be ill.

PREPARATION

Irrespective of the method of delivery, the presenter must consider the following parameters in preparing for the presentation: knowledge of the audience, knowledge of

subject, use of time and rehearsal, and personal appearance and grooming. Additionally, the preparation and use of visual aids is an important element of any effective presentation.

- **Knowledge of the Audience:** Do not patronize your audience! Neither speak down nor speak up to your audience. How much do they already know about your subject? Know the age level of the audience as well as its members' level of educational sophistication and special interests. Tailor your presentation accordingly.
- **Knowledge of Subject:** Whether you use notes, manuscript, or strictly memory, you must know your subject well. If gaps exist, do your homework and hit the books!
- **Use of Time and Rehearsal:** Time limits are to be observed! Even if no time limit is given, you should strive to do justice to your subject in as little time as possible (KISS principle #1: Keep It Short and Sweet), but not at the price of an incomplete presentation. You must decide which aspects of your presentation are to be treated with detail and which aspects are to be included for additional information and color. ***The key to effective and efficient use of time is rehearsal!*** Use a stop watch and rehearse, revise, rehearse, revise, and rehearse until your presentation is within the target time limit. When you rehearse, do so in a manner similar to the actual presentation. Have an audience (even your cat!), stand up, speak in the same volume you will use, etc. When possible, use a video or audio recorder and then critique yourself. (If you do, please don't be too critical; everyone sounds awful and/or looks absolutely horrible upon playback. Don't worry.)
- **Personal Appearance:** Your personal appearance affects your credibility. Informal clothing is rarely appropriate for a professional presentation. Pay significant attention to personal grooming.

PRESENTATION DELIVERY

OK, so the big day has arrived. You have prepared a well organized presentation and now it is time to actually deliver it to a real audience. To make sure that you reap the full benefits of your efforts, during the presentation pay attention to your poise and enthusiasm, eye contact, the use of voice, and the use of time.

- **Poise and Enthusiasm:** People tend to upgrade or downgrade the case a speaker presents to the level of the speaker's competence in presenting the material. Be well prepared and strive for muscular control, alert attention, vibrant interest in the subject, and an eagerness to communicate. Avoid distracting mannerisms, but don't stand in a "frozen" position. Moving about, if not excessive, can accentuate your enthusiasm.
- **Eye Contact:** Eye contact is analogous to plugging into your audience's brain. At some time during your presentation try to make eye contact with ***EVERY*** person in the room. Avoid fastening your gaze on your notes, on your chart or screen, or on some point in space above the heads of your listeners.
- **Use of Voice:** Don't speak too softly, too fast, or mumble! Your audience must be able to (1) hear what you say (voice amplitude) and (2) understand what you say (speech, word resolution, and clarity). Use voice emphasis to stress important points. Modulate, enunciate, and use tonal variety. A good speaking voice is not harsh or nasal, but has a pleasing melody. Open your mouth and***enunciate clearly***. Pay

particular attention that you do not garble your words, run words together, or mumble. Have variety in your voice. You can give importance to what you are saying by a well-timed pause, lowering your voice, or talking deliberately, as well as by stressing your points.

- **Use of Time:** Without adequate preparation, it is easy to become nervous and start rushing through a presentation. Instead, use the pacing established during your many rehearsals. You planned your presentation, now follow the plan. Don't suddenly decide to "wing it" and roar off on some tangent or skip a whole section and then find yourself needing to backtrack. Once you do such things, your sense of time and pacing will be severely compromised.

Pay attention to subtle audience feedback mechanisms. Should the level of coughing suddenly increase during your presentation, this is a signal from the audience that their patience is wearing thin. If appropriate, quickly wrap up this particular part of the presentation and move on to the next part making sure, of course, that no important points are left out. (This problem should never exist ***if*** you properly prepare.)

LANGUAGE

It is important to remember that the language used in a presentation reflects upon you and your credibility. Use only professional language appropriate to the audience and the topic. Make sure that correct grammar and word choices are used throughout the presentation. Avoid using colloquialisms such as incorrectly substituting *ideal* for *idea*a common mistake in this region.

A typical audience will be comprised of people representing many different social and ethnic groups. "Off color" remarks which you and your social peers find hilarious may be quite offensive to others. Once you have alienated an audience, you have lost them forever. When in doubt, don't do it.

VISUAL AIDS

Visual aids can make or break your presentation; in a ***technical*** presentation they are ***absolutely required***. They can help you keep your presentation on track as well as assist your audience in following your main thoughts. They may be used as a guide in helping you to remember main points and their order. For example, you could either show a series of slides or transparencies or use a computer presentation graphics application such as PowerPoint™ and explain each visual as your presentation progresses). Remember, a good graphic can have a value equivalent to 103 words.

Rehearse your presentation with the visual aids you will actually use during the presentation. Don't read the slides to your audience, but use them to guide and focus your audience's attention, reinforce your main points, and provide detail.

Finally, do not use a visual aid until the appropriate moment. Likewise, take down any visual aid as soon as you are finished.

Slides, transparencies, and computer graphic displays

Slides, transparencies, and computer graphic displays should have clarity, be informative, visually pleasing, and not-too-complex (KISS Principle #2: Keep It Simple, Stupid) the form factor of each slide, transparency or screen should have the following attributes:

- Letter-size (8 1/2 x 11) or similar aspect ratio;
- Landscape orientation (as contrasted to portrait orientation);
- Easy-to-read typefaces such as Times Roman, or Helvetica (a.k.a. Arial), with a ***minimum font size of 36 points*** (1/2 inch);
- Each frame should contain no more than five (preferably three) points.
- Color can be used quite effectively for emphasis and showing relationships, but remember that many persons cannot visually resolve colors.

Show-and-tell articles (Props)

Show-and-tell using actual articles (a.k.a. props; a.k.a. touchy-feelies) can be effective for small-group audiences (especially if the props can be passed around) but are of little value if the audience members in the back row cannot see the item. A video display, however, might overcome this shortcoming.

Another problem associated with passing around props is the inevitable time lag betwen when you introduce the object and when it arrives in the hand of each audience member. If possible, have multiple objects on hand to minimize such delays.

THE DOS AND DON'TS OF ORAL PRESENTATIONS

The following are some "DOs" and "DON'Ts" for good oral presentations:

"DOs"

- Prepare an audience analysis.
- Organized the presentation to flow from one section to another.
- Prepare and rehearse the presentation.
- Visit the room where the presentation will be given ahead of time.
- Tell the audiencein the introduction your subject, who you are, and your qualifications to speak about the subject.
- State your main ideas at the beginning.
- Provide adequate support for your ideas.
- Integrate relevant, supportive, and attractive audio-visual aids into your presentation.
- Use words that express your ideas clearly.
- Use acceptable language, pronunciation, and enunciation.
- Dress appropriately.
- Avoid distracting body movements.
- Maintain eye contact with the audience.
- Display enthusiasm and genuine concern for your subject.
- Use appropriate tone.

- Use transitional devices, words, and phrases coherently.
- Allow time for a question/answer period.
- Answer questions credibly. If you don't know, say so.
- Start and stop your presentation on time.

"DON'Ts"

- Don't be late for the presentation.
- Don't be afraid to pause and take a deep breath or two before you begin (or during your presentation, if required).
- Don't hyperventilate; just relax and breathe normally.
- Don't speak in a monotone or mumble.
- Don't slouch. (Your mother was right.)
- Don't read your notes.
- Don't sit or lean on the desk or lectern.
- Don't hide behind the lectern.
- Don't sway or rock in place.
- Don't pace back and forth.
- Don't forget your audiencedon't avoid eye contact.
- Don't use technical terms unfamiliar to your audience provide clear explanations and definitions.
- Don't hold the pointer when you're not using it (but don't forget where you placed it, either).
- Don't stand in front of your visual aids.
- Don't leave the overhead projector, slide projector, etc. on if the screen will be blank.
- Don't leave a visual aid in place that is no longer relevant to the current topic.
- Don't forget that giving presentations is hard, but necessary if you are to be an effective communicator.
- And don't forget to have a bit of fun-you don't ***have*** to be boring.

CHECKLIST FOR ORAL PRESENTATIONS

The following is an example checklist that might be used when evaluating oral presentations. The student should consider such basic criteria when preparing oral communications.

Presenter (print):

Title of Presentation (print):

Course: End Time:

Section: Start Time:

Evaluator: Elapsed Time:

Organization and Content (45%):	**Poor**		**Avg.**	**Excellent**	
Appropriate Introduction	1	2	3	4	5
Clear Thesis	1	2	3	4	5
Presentation Organization	1	2	3	4	5
Adequate Support for Ideas (Weighted 2x)	2	4	6	8	10
Definite Conclusion	1	2	3	4	5
Visual Aids (Appropriateness & Effectiveness)	1	2	3	4	5
Q & A Session-Knowledge of Topic	1	2	3	4	5
Use of Allotted Time	1	2	3	4	5
Presence (15%):					
Physical Appearance, Neatness, and Grooming	1	2	3	4	5
Posture, Gestures, and Movement	1	2	3	4	5
Eye Contact	1	2	3	4	5
Delivery and Grammar (40%):					
Enthusiasm and Vocal Variation (freedom from monotone)	1	2	3	4	5
Preparation and Knowledge of Materials	1	2	3	4	5
Effectiveness of Delivery Method	1	2	3	4	5
Vocabulary and Use of Appropriate Words	1	2	3	4	5
Freedom from Distracting "Uh"s & "Like"s, etc.	1	2	3	4	5
Pronunciation, Enunciation, Audibility, and Clarity	1	2	3	4	5
Grammar (Weighted 2x)	2	4	6	8	10

Total score out of a possible 100 points: Grade:

USEFUL LINKS:

http://www.etsu.edu/scitech/langskil/oral.htm
http://www.canberra.edu.au/studyskills/learning/oral

16

STARTING A CAREER- SETTING GOALS AND MAKING PLANS

DISCOVER A CAREER THAT IS RIGHT FOR YOU

Explore

Match your skills, values, and interests to potential careers and research your top options.

Decide

Find tips for deciding between careers so you can focus on the best option for you.

Act

Develop an action plan to identify and reach your career goals. Learn how to turn your goals into accomplishments.

Identify Your Top Career Options

Begin your career journey discovering the essential "you" and exploring potential career options that offer your best career fit.

Self-Assessment

Identify your values, skills, and interests to help you determine potential careers.

Researching Careers

Research career options to determine the best career path for you.

Exploring Majors/Courses

Evaluate key characteristics of majors and how they relate to career options.

Explore / Self Assessment

CareerSpots

Assess Your Personal Themes to Choose Your Career

Self-assessment is the first step to effectively plan your career goals. Discover your personal career themes, passions, and talents by examining your interests, personality, values, and skills. Then narrow down your preferences and look for patterns and themes to idenitfy a full range of career options.

Identify Your Personal Career Themes

Start by responding to these questions:

What do I want from my life and work?

What motivates me to excel and what is success for me?

Interests: What do I love to do, e.g. activities, hobbies, subjects, book topics?

Personality: What are my personal traits, motivational drives and needs?

Values: What is most important to me, e.g. achievement, creativity, helping others, high salary?

Skills: What do I do well and which skills do I most like to use? Do I have experiences that convey these strengths to employers?

Prioritize your list to your top preferences and analyze the list for patterns and themes. Now that you've explored "who you are," you should consider what you "want to do." Brainstorm career and industry options that align around these career themes. Below are two ways to get more help with self-assessment and generating career options. Following your self-assessment, the next step is to research your top career options.

Research Opens Doors to Career Ideas

After you have narrowed down your career options through self-assessment research your career options. There are four possible ways to investigate careers you are interested in.

Talk to Others

A great way to find out more about a particular career is through talking to others. Through networking and informational interviews you can reach out to family, alumni, faculty, and industry experts to gather valuable information.

Online Research

Use these online tools to help you research different career fields.

Occupational Outlook Handbook

Myplan

Wetfeet Guide
Attend an Event or Career Fair

You can attend panel discussions, career fairs and events that take place at MIT throughout the year. See our calendar.

Get Experience

Gain real life work experience from an internship, shadowing opportunity and/or research experience.

Decide on Your Ideal Career Path

Identify Your Career Options

Develop a refined list of career options by examining your interests, skills, and values through self-assessment and narrowing your career options by reviewing career information, talking to professionals in the field, or actual experiences such as shadowing, volunteering, and internships.

Prioritize the Choices

Prioritize your essential criteria, listing desired interests, skills and values in priority order. Clarify that list further by rank ordering the criteria or by creating a rating scale. Be sure to use the same system for all of your criteria.

Make Comparisons

Compare your most promising career options against each of your prioritized criteria. Evaluate how strongly the option might express a particular criterion.

You should now have your prioritized career choices. With Myplan, an online career planning system, you may prioritize and save your options.

Other factors?

You should consider factors beyond personal preferences. What is the current demand for this field? If the demand is low or entry is difficult, hare you comfortable with risk? What qualifications are required to enter the field? Will it require additional education or training? How will selecting this option affect you and others in your life? Gather advice from friends, colleagues and family members. Consider potential outcomes and barriers for each of your final options.

Make a Choice

Choose the career paths that are best for you. How many paths you choose depends upon your situation and comfort level. If you're early in your planning, then identifying multiple options may be best. You may want several paths to hedge your bets. Conversely, narrowing to one or two options may better focus your job search or graduate school application.

Next Steps

Now that you've identified your career options, develop an action plan to implement this decision. Identify specific, time-bound goals and steps to accomplish your plan.

17

JOB INTERVIEW

Whether they know it or not, all Hiring Managers are looking for certain characteristics or "Behavioral Competencies." One of the most important is CONFIDENCE.

WHAT YOU WANT TO DEMONSTRATE:

Courage / Persuasion: This is your ability to increase your determination to get the job done when you are faced with resistance or a difficult situation. Show the ability to move people towards a commitment to buy or act. Demonstrate that you are fair and nice, but also show that you are aggressive and may even sometimes intimidate others. Don't be modest. Demonstrate confidence and the fact that you are not easily intimidated. Indicate the desire to influence the thinking of others. Show that you can gain agreement from others via logic, alternatives, and emotional appeals.

Beliefs / Ethics: This is your capacity to believe strongly in what you do and emphasize service. Indicate LOYALTY so that the Hiring Manager knows that you won't quit after three months – or leave your clients hanging and out of the loop. This quality is key to the development of accounts and customer satisfaction. Show that you will act in terms of what is right. Demonstrate that you follow through and actually do what you say you will do.

Commitment: This is your capacity for becoming dedicated to your work. You should demonstrate a strong belief in what you do. Demonstrate that you are willing to make a sacrifice for people when appropriate because you are a COMMITTED person. Show a strong responsibility and commitment to not only the Hiring Manager and the company, but even more importantly, to customers and clients.

Work Orientation / Stamina: This is your capacity to handle mental intensity and hard work. Indicate the high tempo and speed at which you work, and your capacity for endurance. Show that you invest the - TIME and ENERGY necessary to get the job done right the first time – consistently.

Interpersonal Skills / Charm: This is your capacity to know how and when to get things done with people. Show that you are outgoing and charming, and that you are especially effective in this regard when you have an objective in mind, or need someone to do something. Demonstrate that you have an intrinsic need to win the approval of others, fit in, and get along. Show that you have the ability to build quick relationships with people.

Discipline: Demonstrate that you have inner standards that make you both predictable and productive. Show that you enjoy the responsibility of planning and carrying out your own schedule. Indicate that you can smotivate yourself to work on a task until completion.

Competitiveness: This is your drive to be better than others. Show that you like to compete and have the desire to win, and show the maturity of knowing how this benefits everyone.

Focus: This is your ability to determine what is important, set priorities for tasks, and maintain direction. Show that you understand how to set short and long-term objectives, and how to intelligently schedule these objectives so that you hit your goals and complete tasks on time.

Big Picture Thinking: This is your ability to see the big picture, and not get bogged down in the minutia of small tasks. Demonstrate a tendency toward project closure. Show your ability to see "the real goal" and what it takes to get there.

"Show," Don't "Tell"

WHEN YOU GIVE EXAMPLES, USE THE S.T.A.R. STATEMENT FORMAT

If you take any one single action after reading this guide, it should be to identify and write out at least six to eight detailed personal S.T.A.R. statements.

Situation / Task

Describe the situation that you were in or the task that you needed to accomplish. Be very specific and give details, but keep it short and concise. Throughout your interview you'll want to make many S.T.A.R. Statements when using "FOR EXAMPLE."

Action

Describe the action you took and be sure to keep the focus on you. Even if you are discussing a group project or effort, describe what YOU did – not the efforts of the team. Don't tell what you MIGHT do, or WOULD do – tell what you DID do. Incorporate Behavioral Competency keywords into the description of your action. (Reread the Behavioral Competency section above to make sure you include some of those terms in your S.T.A.R. Statements).

Results

Describe what you achieved. What happened? How did the event end? What did you accomplish? What did you learn? How did it make people feel? How did you feel? How did your boss feel? How much time and money did you save? Would you say that you solved the problem? Did other people recognize you or commend you for your efforts? Name them specifically.

Your result: How did it GET? GET RID OF? RELIEVE? AVOID? PRESERVE? PROTECT? ENHANCE? IMPROVE? INCREASE? – Use some of these "outcome keywords" when describing your results.

ABOUT BEHAVIORAL INTERVIEWING

Even if an employer has not told you that you will be involved in a "Behavioral," "Behavior-Based," or "Situational" Interview, you are still likely to face "Behavioral Interview" style questions. Traditional Interview questions ask you basic questions such as "Tell me a little bit about yourself." The process of Behavioral Interviewing is much more challenging. They will ask you about situations and try to pick apart your answers to see if your behaviors

match up with the Desirable Behavioral Competencies they are looking for. They are trying to make a prediction of your future success by understanding how you have handled situations in the past.

In a Traditional Interview, you can usually get away with somewhat vague, general answers – or just tell the interviewer what you think he or she wants to hear. In a Behavioral Interview, on the other hand, they're going to be asking you for very specific examples. They're going to be asking you for details, including names of people, dates, and outcomes. They'll ask you about lengthy projects you've been involved in – how your role evolved, how you handled deadlines, pressures and difficult personalities, how you went about thinking through problems, and how you determined what steps to take, and in what order.

When you give examples from your work experience, the Behavioral Interviewer is going to probe you to try to understand how you think. They are going to start questions with "Tell about a time ..." or "Describe a situation ..." and then they will ask you to elaborate with questions like "So what were you thinking at that point?" or "What was your decision making process?" or "Tell me how the meeting went with that person."

Remember, the core Characteristics / Competencies they will be looking for are:

- Courage / Persuasion
- Beliefs / Ethics
- Commitment
- Work Orientation / Stamina
- Interpersonal Skills / Charm
- Discipline
- Competitiveness
- Focus
- Big Picture Thinking

Additionally, they will be examining your critical thinking skills, willingness to learn, willingness to travel, willingness to sacrifice, selfconfidence, teamwork habits, professionalism, energy, decisiveness, sensitivity, tenacity, work standards, risk-taking orientation, and more.

HERE'S HOW TO PREPARE:

1) Write down six to eight example situations from your past experience where you demonstrated desirable behaviors and skills that employers look for. What was the Situation? What Action did you take? What was the Result? Add as much detail as possible. Edit and rewrite your examples. This is your Arsenal! Take the time to make it strong. You want to get hired, don't you?

2) Don't be bashful – think of examples that highlight your strongest skills.

3) Half of your accomplishment statements should be totally positive, such as large achievements or accomplishments. The other half should be situations that started out negatively but ended positively.

4) Have some variation in your examples. Don't take them all from just one job. Don't make them all relevant to just one theme.

5) Use fairly recent examples, if you can.

6) In the interview, listen carefully to each question. Pause, and then choose an example story. If you practice, you can learn to tailor a relatively small set of 6 to 8 examples to respond to almost any type of question. This way you successfully "package & spin" your work experience for almost any type of question!

INTERVIEW "DON'TS"

- Don't take your accomplishments for granted. No matter how small, or how few, your accomplishments are important. Package them and position them so that they demonstrate your desirable Behavioral Competencies and show that you will be successful at your new job. Don't forget to make your accomplishments measurable in terms of saving time and money, or making your colleagues, clients, and superiors feel more secure, respected and admired.

- Don't be too modest. Job interviews are not the time to be modest. By all means, don't be cocky or overbearing, but DO make flat out statements like "Based on my skills, and experience with "X," really do think that I would be a great addition to your team." If anywhere, the job interview is the right time and place to toot your own horn.

- Don't be constrained by official job descriptions. Your role and responsibilities are often more than your past or future "official titles" may indicate. Think of yourself as equally as important as the Vice President or CEO within your sphere of influence. If you think of yourself as an important person who has a job to do, then others will think of you in the same way. Indicate that you are willing to take on tasks outside the official job description as necessary and appropriate.

- Never volunteer any negative information about yourself. Don't testify against yourself. If asked your greatest weakness, reply with a weakness you have conquered, or tell the interviewer about a weakness that may actually indicate a strength, like "sometimes I get impatient with teammates who are not as organized as I am." Don't ever describe any job requirement or task that you did not like.

- Don't criticize your former boss or employer. Talking trash about past jobs, bosses, colleagues or clients never pays off – in interviews and life in general. It is better to be a person who does not gossip or talk trash about other people.

- Don't ever lie. Don't be dishonest in an interview. It will come back around and get you. You can, however (within reason) exaggerate, omit, be ambiguous if necessary, and talk in superlatives. You are trying to sell yourself, after all. Advertisers have no qualms about making strong claims about their product or service. Do the same for yourself. Put your best foot forward and pump yourself up – but never lie.

- Don't inquire about salary, vacations, or other benefits until after you've received an offer, or when you are close to the offer stage. It makes sense that you should build your own perceived value as high as you can before you ask for the money. You will be able to price yourself higher this way.

However, you must be prepared for a question about your salary requirements. Some interviewers may even ask this up front. Go into every interview with an idea of the probable salary range for the position. Be prepared with an understanding of the market rate for the type of position you are interviewing for. If the subject of salary is brought up and you must address it, then ask for the highest number. ALWAYS ASK FOR WHAT YOU WANT, or you won't get it. You will regret low-balling yourself, so ask for the high number, but make sure it is within the right range so you don't appear stupid or greedy – or price yourself out of the job.

- Don't feel pressured to answer every question. Sometimes the best answer is "I don't know." If you don't know the answer, say so. You can't know everything. Use times like these as an opportunity to demonstrate your willingness to learn. By all means, do not try to BS something that you know nothing about. Change the subject or answer with a different S.T.A.R. Story if "I don't know" is not in your vocabulary.

TELL ME A LITTLE BIT ABOUT YOURSELF

Cover your 1) early years 2) education 3) work history, and 4) recent career experience. Remember that this is just a warm-up question. Don't waste your best points on it.

"Well, I grew up just outside of Chicago and then went to school at the University of Maryland where I studied Political Science and Art History. While I did love Political Science, I always knew that I would need to do something practical, so right out of college I got a job doing "X". Job "X" really tested my stamina and work ethic because I had to … , but I managed to achieve a lot there and learn a lot about my chosen field. From there I got hired into a more senior position at Company "Y". That's where I really developed my teamwork skills and learned to create and manage budgets as high as 1.5 million dollars. Right now I

think that my skills and experience make me a great candidate for a position on your team, and I hope to demonstrate that today. What kind of qualities are you looking for in the ideal candidate for this position?"

What do you know about our company?

What do you know about our competitors?

Discussion:

Before you go into the interview, you want to research the company so you know as much as possible about its products, size, quarterly revenues, image, reputation, management, history, philosophy, goals, problems, and competitors. Communicate that you have made a conscious choice to target this company because of the great things that you know about it.

Why do you want to work here?

Discussion:

Keep your answer opportunity-oriented. Show that you are looking to work hard and contribute, but also talk about the company as being the right place for you for the foreseeable future. Indicate the features of the company you like, and why the work appeals to you. Indicate your skills and experiences that will enable you to take advantage of the company's features and become a valued employee.

In what ways do you think you can make a contribution to our company? What makes you qualified for this position?

Discussion:

Remember that contributions to a business are usually measured in time and money. Show how you can contribute to the success of projects, and make sure you relate that to the impact on the bottom line.

Why did you leave your last job?

Discussion:

Describe your reason for switching jobs directly and succinctly. Do not go into great detail unless you are asked. The longer you spend on this subject the more suspicious the interviewer may become. Make sure you stress you are leaving on good terms. The

Hiring Manager will want to believe YOU WERE NOT THE PROBLEM and will want to get an idea of how you handled yourself. Provide evidence you handled it well by volunteering references. State the facts in a positive way. Don't be negative or bad mouth your former boss, colleagues, or company. Don't speculate on the motives or feeling of the other people involved in the events of your departure. Stick to one response. Don't change answers during the interview. Give a "group" answer if possible, like "our office was closing". Another possible answer – although not the best – is "we agreed to disagree."

What do you consider to be your greatest strengths and weaknesses?

Discussion:

Tailor your strengths to the position and the hidden needs of the manager in terms of making their job easier and making them look good. Whatever you do, don't claim that you don't have any weaknesses. List your strengths first, and list many. You will want to list the desirable Behavioral Competencies that hiring managers are looking for. Then speak to your weaknesses, but only name one.

You can identify a weakness that is actually a strength, but be careful with this – you don't want it to be too obvious or transparent. Keep the description of your weakness short, and finish with a pause as if you are ready to move onto the next question.

What have you learned from your mistakes?

Discussion:

Show that you are able to learn from your mistakes, but don't offer up any negative examples concerning your past performance. Show that you have been successful, but that have the maturity it takes to examine your own behavior so that you can learn and grow and be a better employee. Be brief.

How do you deal with competition? Are you a competitive person?

Discussion:

Most employers are looking for a competitive spirit. This involves not only the drive to beat business competition, but also an internal competitive fire to be the best. You want to show that you play to win, but also that you are a team player who understands that competition among coworkers benefits everyone.

What would you consider an ideal work environment?

Discussion:

In answering this question, try to describe an environment as close as possible to the environment you are trying to get hired into. Make statements that align with the corporate culture. Also, you should mention some general characteristics about a healthy working environment to point out the type of company standards that will bring out the best in you. Ask questions. HR professionals in particular really like to talk about the "corporate culture" and the great environment they have created for employees.

How well do you work with people? Do you prefer working alone or in teams?

Discussion:

Being able to work with others is extremely important. Even if you really are a lone-wolf at heart, you need to demonstrate that you enjoy and work well with other people. The Hiring Manager will usually have to work with you, and the interview is the beginning of that

relationship. This is the time to let your people skills shine. You should give three sold S.T.A.R. Statement examples of how you have dealt with various team and interpersonal situations in the past.

Tell me about a time when you had to use your presentation skills to influence someone's opinion.

Discussion:

This question is about communication, persuasion, and presentation skills. Focus on your presentation skills as you use them to persuade. You want to show that you can prepare and persuasively present a topic or position to a group of people.

Describe the most creative thing you have ever done.

Discussion:

Creativity is a real value in the work place today. It is through creativity and innovation that organizations get the competitive edge. Use this question to demonstrate that you are a creative person, and a creative problem solver.

What do you really want to do in life? What do you see yourself doing five years from now? Ten years from now?

Discussion:

This can be a tough question. It is very open ended. Be prepared, and practice your answer. Relate your answer to your career goals, but also show a larger objective in your life that the Hiring Manager can relate to – like having the security of knowing that you can provide for your family, or having the earning power to take the type of regular winter ski vacations that you enjoy. Make sure you include the position you are interviewing for as an important part of your "five year plan."

"Well, as I mentioned, my career is very important to me. It is what I am most focused on in my life right now. I really do want this job because I know it will allow me to do good work and perform to the best of my abilities, and I know that will take me places within this organization. I want to work hard at this job so that I can be promoted here and have a lengthy tenure. Within five years I would like to be at the management level, and working toward the VP level within ten years. Success in my career is part of what I want out of life, because I want to enjoy what I do, do good work, and be rewarded for it nicely.

I want to have the sense of security of knowing that I can provide for myself and my family. I also want to have the earning power so I can save for the future, and take regular ski weekends without having to worry excessively about my finances. That said, becoming a respected executive at the VP level is my long-term goal. What can I do here to best point myself in that direction?"

"Every three or our years I establish long term goals and objectives, and I try to review them every quarter. I try to keep them realistic, and I assess them in relation to where I currently

am. My current plan obviously includes a move toward more challenging and satisfying work, and that is why I am here today. Besides that, I feel really good about where I am with my personal goals. In five years I would like to be …"

How to answer "Yes or No" Questions

Discussion: Turn simple yes or no questions into a launching pad for your great examples. For an answer to a yes-or-no question like "Can you use ABC software?" you might answer: "Yes. In fact, I was trained on it, and at Job "Y" I even developed some new techniques with it that were adopted by the department." Always give a good quick example when answering "yes" to a yes-or-no question. If you need to answer "no" when it really would be better to answer with a "yes," try to avoid the "no" by using some of these answers:

"Yes, I certainly have had some experience with products like that."

"Yes, I am familiar with those accounting practices in general, and have read about them."

"Yes, I was in a situation similar to that. It was at Company XYZ …"

"Yes, I have had some exposure to those techniques. How do you use them here?"

"Yes, I have experience similar to that."

Why should we hire YOU? What can you do for us that someone else cannot?

Discussion:

This is the answer you should basically be repeating over and over in different ways throughout the interview. You want to try to differentiate yourself. Show that you have all the Behavioral Competencies required to succeed at the job, but also show that you are unique, different, and better than other candidates. Don't forget to speak to the Hiring Manager's hidden needs – what you can do to make his or her job easier and make them look good. Relate your past experiences of success in solving previous employer problems that are similar to those of the prospective employer.

USEFUL LINKS:

http://www.prismnet.com/~hcexres/textbook/acctoc.html