Introduction to Technical Writing

1st Year Engineering Students Development of Paragraphs

ALE

REFERENCES

- Leo Finkelstein, Jr.; Pocket Book of Technical Writing for Engineers and Scientists, McGraw-Hill's Best, 2005.
- Technical & Business Writing (ENGL 2311 at ACC).htm
- Communications\Introduction to Communication Skills - Mind

Job Is.htm

Ways of developing paragraphs

- Each development way is characterized by using supportive specific words and appropriate connective words.
- Consult reference book: Pocket Book of Technical Writing; chapters 3, 4, and 5.



- Definition is the process by which one assigns a precise meaning to a term.
- The format for technical definition works like this:

Term = classification + differentiation



 A term may have more than one definition, in this case it is necessary to add a qualifier before the term and then define the term so the format for technical definition becomes:

(Qualifier + Term) = Classification +

Examples;

- In aeronautics, a stall is a flight condition in which the lift produced is less than the weight of the airplane.
- In driving, a stall is an operating condition in which a sudden and unexpected loss of power occurs.
- In dating behavior, a stall is an interpersonal maneuver used by one party iscourage the unwanted advances of another.

Classification

The class should be a general category in which the term fits, but not too general.

Ex.

The 33-kilohm, 1 watt carbon resistor is a (device - circuit component fistor) that impedes the flow of electric current echnical Writing Iman ElMahallawi, BUE

Differentiation

This involves narrowing the meaning of the term to just one possibility within the class.

In the previous example the circuit component involves capacitors, diodes, switches, potentiometers, inductors, transistors, and IC chips, so one must say:

Extensions

- You may also use the following ideas for developing extension sentences after definition: Comparison and Contrast, Classification, Cause and Effect, Process, Exemplification, Etymology.
- The extension will depend on the guidience knowledge and previous experience. Technical Writing Iman

Extensions

- See examples for extensions in p31, and 32.
- HW
- Exercise p36.



Description of a Mechanism

- Mechanism descriptions are precise portrayals of material devices with two or more parts that function together to do something.
- Description of a mechanism includes an Introduction+ Discussion+ Conclusion.



Description of a Mechanism

• Example: Provide a model for a general mechanism description to show how the 33-kilohm, 1 watt carbon resistor works.

Introduction

Define the mechanisms with a technical definition.

function or purpose Writing Iman ElMahallawi, BUE

Description of a Mechanism Introduction

- Describe the mechanisms overall appearance in terms of shape, color, material, finish, texture, and size.
- List the mechanisms parts.
- The 33-kilohm, 1 watt carbon resistor is a circuit component that impedes the flow of electric current. The resistor impedes the movement of free electrons, thereby generating a thermal response depending the movement, cross section, and length of the resistive element.

Description of a Mechanism Introduction

The resulting resistance is measured in ohms; a resistor is defined as having 1 ohm of resistance when an applied electromotive force of 1 volt causes a current of .00003 ampere would flow. In addition the square of the current flow in amperes, times the resistance in ohms, determines the power dissipated in watts.

Description of a Mechanism Introduction

The resistor consists of the following parts: two wire leads, the carbon element, the casing, and the color bands.



Description of a Mechanism Discussion

Discussion

- Define the first part with a technical definition, adding extensions.
- Define the parts overall functions.
- Describe the parts shape, color, mateial, etc.

• Repeat this pattern if you have more Than one part.

Description of a Mechanism Discussion

Example:

The carbon element is the capsule of resistive material that converts electrical energy into heat. The carbon element serves as the primary active component of the resistor and provides the necessary 33,000 ohms of resistance. The element functions by blocking, to some degree, the flow f free electrons passing through it. Technical Writing Iman ElMahallawi, BUE

Description of a Mechanism Discussion

The energy released by these blocked free electrons is then dissipated in the form of heat. The carbon element is cylindrically shaped and is 2.4 centimeters long with a diameter of 0.31 cm. It is composed of finely ground carbon particles mixed with a ceramic binding compound. The element is gray with a dull, mate inish. The carbon element is slectrically connerviced Writing I man the leads.

The final section of the mechanism description serves two purposes: it summarizes the description of the mechanism, and it provides a sense of finality to the document.

Example:

The 33-kilohm 1-watt carbon resistor is a circuit component that impedes the flow of electric current through the use of compon element. The resistor is made up of four parts: the carbon element, which mpedes the flow certain bigan

converting a portion of the electrical energy applied to heat, the wire leads, which electrically connect the element to the circuit and support the resistor mechanically, the casing which encloses and insulates the element and dissipates heat from it, and the color bands, which indicate the resistance and tolerance of the **Technical Writing Iman** ElMahallawi, BUE

Together, these parts form one of the most commonly used circuit components in electronic systems today.

Watch punctuations and parallelism in the conclusion.



• HW Exercise p56, 57, and 58.



Description of a Process

- Process Descriptions are similar to mechanism descriptions in organizational structures.
- Process descriptions are precise portrayals of events occurring over time that lead to some outcome.
- Process description may follow this outline: Introduction + Discussion +
 Conclusion. (Self reading)