

**King Saud University  
College of Engineering  
Industrial Engineering Department**

***Project Preparation Methods -  
Introduction and Background***

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**Presented by:**

**Dr. Ahmed M. El-Sherbeeny, PhD**

**Assistant Professor, Industrial Engineering Department**

**Head of Alumni and Employment Unit, College of Engineering**

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# *Introduction*



# What is the Introduction Section

- Introduction is,
  - ▣ most read section of any deliverable
  - ▣ largely determines attitude reader/reviewer will have toward the work
  - ▣ most delicate part of the writing of a report
  
- Problems
  - ▣ Many people (even experienced ones) have difficulties at writing a good introduction
  - ▣ For some, it is a daunting task.



# Contents of Introduction

- In this section,
  1. State the
    - **nature** of the problem
    - the **aims and objectives** of the study, and
    - **brief background** information
  2. Provide the context for the study you will be presenting
    - why is what you are doing **relevant** to other scientific work?
    - How does it **relate** to this other work?



# Contents of Introduction

## □ In this section

3. Include the **justification** and relevance of the study
4. Try to answer the following questions,
  - **why** do the study?
  - what is the existing **state of knowledge** of this topic?  
(restrict background information to that which is pertinent to the research problem)
  - what are the **specific objectives**?
5. Clearly state the question that you sought to answer (i.e. problem statement in simple terms)





# A Recipe for Writing an Introduction

- Introduction should contain following three parts,
  1. Background
  2. The Problem
  3. The Proposed Solution
  
- Introduction *may* include three additional parts,
  4. An anticipation (i.e. hint) of the conclusions.
  5. Related work
  6. The outline (plan of the paper)



# A Recipe for Writing an Introduction

- Introduction should contain following three parts,
  1. Background.
    - Here you have to **make clear what the context is.**
    - Ideally, you should give an idea of the **state-of-the art** of the field the report is about
    - i.e. state where is the world/science currently regarding this topic so you can show the reader what can be next
    - i.e. why is what you are doing relevant to other scientific work?
    - And how does it relate to other work?
    - But keep it short; this part should be usually  $\frac{1}{2}$ -1 pg. long





# A Recipe for Writing an Introduction

- Introduction should contain following three parts,
  2. The Problem.
    - If there was no problem, there would be no reason for writing report ⇒ no reason for reading it
    - Thus, **tell readers why they should proceed reading**
    - e.g. simple sentence like
      - "So far no-one has investigated the link between ..." or
      - "The above-mentioned solutions don't apply to the case ...",
    - ... can sometimes be enough to clarify your point
    - Experience shows that for this part **few lines are often sufficient.**



# A Recipe for Writing an Introduction

□ Introduction should contain following three parts,

## 3. The Proposed Solution.

- Now - and only now! - you may **outline the contribution(s) of the report.**
- Here you have to make sure you point out what are the novel aspects of your work.
- There are probably 100's/1000's of articles out there on that very subject
- you can't expect the reviewer to know them all
- so make his life easier and clearly highlight what is the difference between your method and the others

You can take your time here, but suggested to avoid getting into too much detail.



# A Recipe for Writing an Introduction

- Additional parts to include in the introduction,
  4. An anticipation of the conclusions.
    - This **can be very difficult** to do properly
    - This part should be there only in reports that have a **strong position-statement** nature.
    - If you decide to include this into the introduction
      - (a) keep it as short as possible
      - (b) refer as much as possible to the concluding section, and
      - (c) keep it *well separated* from the rest of the introduction.



# A Recipe for Writing an Introduction

- Additional parts to include in the introduction,
  5. Related work
    - Postpone this part to Background section, unless there are good reasons for doing otherwise
      - e.g. presence of very prominent related work in literature  
⇒ give immediately differences between your work and that
    - In general, much easier to include all related work in Background section i.e. when reader already has good idea of technical contribution
    - In this case, include in the Introduction a line saying "Related works are discussed in Section ...".



# A Recipe for Writing an Introduction

- Additional parts to include in the introduction,
  6. The outline
    - Mostly useful only for long reports
    - Include here a verbal/brief (vs. Gantt chart) plan of the paper
    - This will give reader anticipation of what comes next (after enjoying the basics covered) and the flow/mood of the report



# A Recipe for Writing an Introduction

- Two Extra Tips
  - ▣ Introductions in which parts 1,2,3 not clearly separated
    - are usually “very annoying”,
    - more demanding to reviewer concentration and energy
    - helps to divide introduction into subsections (\*.1 \*.2 ...)
  - ▣ Keep it short!
    - Removing everything not really necessary is very effective strategy for improving an introduction.



# *Background*





# What is the Background Section

- Background is AKA Literature Review/Survey
- Background,
  - is any collection of materials on a topic (general)
  - discusses **published** information in a particular subject area
  - sometimes information in a particular subject area **within a certain time period**







# What is the Background Section

- Background formats
  - can be just a simple summary of the sources
  - usually has organizational pattern combines both **summary and synthesis** (use either method in SDP)
  - Summary is
    - a recap of the important information of the source
  - Synthesis is
    - re-organization, or a reshuffling, of that information
  - Background may evaluate sources and advise reader on the most pertinent or relevant



# What is the Background Section

- Use of Background in Senior Design Projects
  - ▣ project report will contain a literature review as one of its parts (right after Introduction)
  - ▣ **use literature as foundation** and support for new insight that you contribute
  - ▣ **focus here is to summarize and synthesize the arguments and ideas of others** (without adding new contributions)



# What is the Background Section

- Purpose of Background
  - ▣ provide you a **handy guide** to a particular topic
  - ▣ can give you an overview or act as a **stepping stone**
  - ▣ **keep professionals up to date** with what is current in the field
  - ▣ **for scholars**, the depth and breadth of background emphasizes **credibility of the writer** in his/her field
  - ▣ **comprehensive knowledge** of literature in field is essential to scientific papers



# Preparing for Background Section

- What should I do before writing Background?
  - Clarify
    - Roughly **how many sources** should you include?
    - **What types of sources** (books, journal articles, websites)?
    - Should you **summarize, synthesize, or critique** your sources by discussing a common theme or issue?
    - Should you **evaluate** your sources?
    - Should you provide **subheadings and other background information**, such as definitions and/or a history?



# Preparing for Background Section

- What should I do before writing Background?
  - ▣ Find models
    - Look for **other literature reviews** in your area of interest
    - **Read them** to help you organize your final review
    - Try to use term “review” then keyword(s) in search engine
  - ▣ Narrow your topic
    - narrower your topic, **easier to limit sources** you need to read in order to get a good survey of material
    - Supervisor will probably give you **hints/tips** to limit search
  - ▣ Consider whether your sources are current
    - use information that is **as current as possible**
    - Information even 2 years old could be obsolete!



# A Recipe for Writing a Background

- To compose the Background you should
  1. Find a focus
    - i.e. **don't simply list sources** and go into detail about each one of them, one at a time
    - consider instead what **themes or issues connect** your sources together
  2. Construct a working thesis statement
    - use the focus you've found to construct a thesis statement
    - e.g. *“The current trend in machining alloy steels combines machining using sintered carbides and ceramics”*



# A Recipe for Writing a Background

- To compose the Background you should
  3. Organize your Background
    - Basic categories
      - background also must contain at least three basic elements
      - Introduction: **quick idea** of the topic
      - body of the review: discussion of sources and is organized either **chronologically, thematically, or methodologically**
      - Conclusion: **what you have drawn** from reviewing literature
    - Chronological: i.e. organize by date
    - Thematic: i.e. organized around a topic or issue
    - Methodological: focus is on methods of researcher



# A Recipe for Writing a Background

- To compose the Background you should
  4. Begin composing and make sure to:
    - Use evidence: backup all details with proof
    - Be selective: e.g. don't go too deep in technical details
    - Use quotes sparingly (i.e. short quotes only)
    - Summarize and synthesize
    - Keep your own voice/words
    - Use caution when paraphrasing
    - DO NOT PLAGIARIZE!!!!
    - Revise, revise, revise, ...





# *Questions*

