

# MSFEA Guidelines for Writing in Engineering

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This document presents the MSFEA guidelines for writing technical documents. These guidelines were developed to address the weaknesses in student writing as identified by MSFEA faculty surveys and interviews. Specifically, the guidelines address means to enhance the technical writing **process, content style and structure**, and **form**. MSFEA students are encouraged to follow these guidelines in order to improve their writing throughout their coursework and professional experiences at MSFEA and beyond.

## 1. The Technical Writing Process

### The prewriting process: where to start

Every writing instance is unique in terms of: (1) the specific **subject matter** that it addresses, and (2) its writing **constraints** (the **audience, purpose** and **occasion**). The extent to which you will be able to control those factors will vary depending on the writing situation. For instance, while some courses will give you very specific writing prompts to respond to, other courses will give you full control over the *subject* that you choose to write about. Usually, however, you will have very limited control over the constraints of writing, such as *who* will your text address (your audience, their prior knowledge, and their prior attitudes on the subject matter), the *purpose* of writing (to inform, persuade, etc.), and the *occasion (context)* of writing (the formality of the situation, relevant ethical, political, and economic contexts, expected deadlines, etc.).

Prewriting stages involve analyzing the above constraints and fully understanding what you are expected to deliver in your writing assignments. Spend some time *reading* and *understanding* the prompts, *identifying* the various elements that you cannot control, *brainstorming* ideas about how you will address the assignment, and *thinking* of ways by which you can display your creativity and critical thinking abilities. The thought process that goes into this prewriting stage will help you start the writing process with more efficiency and determination.

### Developing your writing process: writing and rewriting your technical documents

As MSFEA students, you will be required to write a number of technical documents, such as lab reports, class projects, internship reports, and FYP reports. Although the topics and general format of those

documents may vary from one course to another, the overall process by which you are expected to write such documents is very similar.

University students often confuse writing to mean the act of typing (or penning) text in response to a certain prompt. At MSFEA, we want you to rather think about writing as a process that extends beyond a single sitting in which you write down your text. The best written technical documents are those that are well-thought and that develop over several stages and iterations.

The purpose and tasks of the different stages of technical writing are summarized in Box 1. Early writing stages involve **constructing your messages** through *researching* various sources, *organizing* your ideas, and building your *evidence-based arguments*. The outcome of this stage should be a strong **draft** in which you have: (1) a clear **direction** for what you want to achieve in your text (your scope, research question(s) and purpose statement(s)), (2) the relevant **messages** that you want to communicate in your document (problem statements, general findings, evaluations of those findings, etc.), and (3) the **evidence** needed to support your main messages (the basis on which you have developed your messages and conclusions should be clear to your readers).

Later stages of writing (**rewriting**) involve **deconstructing your messages** for your audience (who will read the document). In other words, those stages should focus on **re-organizing messages and ideas** in a way that frames what is important for your readers. Those later stages involve **revising** (re-thinking the organization and content of your sections), **editing** (making paragraph- and sentence-level corrections), and **proofreading** (making final grammatical, punctuation, and formatting corrections). The outcome of this stage should be a **strategic and polished document** that appeals to your target audience and responds to the writing occasion and purpose.

### **Box 1: The writing process involves writing and rewriting.**

I. Early stages (**message construction**) include **writing** tasks such as:

1. Researching
2. Organizing information
3. Building strong and evidence-based arguments

Outcome: A strong **draft** with a clear direction regarding what you want to achieve in your text and the evidence-based messages that will help you achieve that goal.

II. Later stages (**message deconstruction for the readers**) include **rewriting** tasks such as:

1. Revising (re-thinking the organization and content of your sections),
2. Editing (making paragraph and sentence-level corrections), and
3. Proofreading (making final grammatical, punctuation, and formatting corrections).

Outcome: A **strategic and polished document** that appeals to your target audience and responds to the writing occasion and purpose.

You should give yourself the needed time and space to complete any kind of writing tasks. Do not expect to write well-thought and refined documents in single sessions. Each one of the above stages and tasks may require several iterations depending on the level of complexity of the subject matter, your knowledge and expertise, and your instructors' expectations. With each iteration, your document will be enhanced in terms of: **content** (your actual messages), **style** (message presentation), and **form** (the appearance of your text). The below sections will further explain the expectations relevant to those elements of writing at MSFEA along with some pointers to help you meet those expectations.