

# Engineering Design Process (EDP)

## The Student Engineering Notebook — Student Guidelines

### Umm, *What is an Engineering Notebook?*

Engineering notebooks are used by professional engineers to document progress and all the good, bad, little, big, successful, failure-ific, and wonderful things related to their projects. The notebooks contain communications, ideas, designs, observations, and data from experiments, as well as reflections on improving. Everything goes in a well-kept engineering notebook. Your engineering notebook will play a critical role in developing the best design and finding the best solutions to a problem. *Your engineering notebook is a valuable part of the team!*

The engineering notebook is a complete record of a project *in chronological order*. The notebook not only shows what was being thought about or completed, it shows when it happened and in what order. There's no such thing as a *final copy* of an engineering notebook. Your notebook is the actual, complete-as-possible living diary and record of your project - with all the misspellings, stains, failed experiments, team arguments, that happened. Your engineering notebook is your project's best friend and it wants to know *everything*.

In the real world, engineering notebooks are useful to determine definitive ownership of ideas, designs, and techniques, and can even serve as legal documentation when filing for patents.

If done correctly, your engineering notebook shows your full process and demonstrates that you and your team really understand how to execute the engineering design process.

### Sounds Cool! *Why Should We Keep an Engineering Notebook?*

<b><i>Documentation</i></b>	Writing clearly and including all the relevant information related to your project enables others to understand your brilliant ideas and reproduce your masterful process or technique.
<b><i>Design and Process Improvement</i></b>	Improvement comes with careful reflection on what went right and what went horribly wrong during a project. Your engineering notebook makes sure your memory matches what really happened.
<b><i>Reference Material</i></b>	Engineering notebooks also serve as great reference material for future projects!

## Okay, So How Do We Keep an Engineering Notebook?

<b>DOCUMENT EVERYTHING!!</b>	Keep the notebook up to date (write it as you <b>think</b> and <b>do</b> the things for this project) and have it witnessed often by those with whom you work with when working as a team.
<b>Stay Organized</b>	Your engineering notebook should be organized enough to have an outsider understand the journey you/team has thought and done for your project.
<b>Include the Engineering Design Process Steps</b>	<p><b>Ask   Imagine   Plan   Create   Improve</b></p> <p>Staying organized is easier when you have a solid framework to follow. Be sure to include the basic EDP steps throughout the iterations of your project.</p>
<b>Write It, Don't Type It</b>	All entries in your engineering notebook should be <i>handwritten</i> in <i>permanent ink</i> .
<b>Introduce Your Team</b>	If this is a team project, introduce each team member and mentor with a brief biography that includes their name, grade level, and their role on the project. EDP is a journey that a team takes <i>together</i> .
<b>Use a Table of Contents</b>	<p>Once the project is completed, add a <i>Table of Contents</i> in the front of the book based on what you have recorded in your notebook during the development of the project.</p> <p><i>Important!</i> Leave two blank pages at the front of your notebook when you start so you have room for the Table of Contents!</p>
<b>Notes and Calculations</b>	All notes and calculations should be done in your notebook, not on loose paper!
<b>Dates and Times</b>	The date and the start & stop times for things should be recorded on <i>every page</i> .

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***Page Numbers*** Be sure to number all of your pages. You should never ever remove or replace pages.

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***Write it All Down*** Include all the things!

Discussions and notes from team meetings; sketches or drawings used to communicate your ideas and designs; detailed notes on development, planning, procedures, ideas, obstacles, failures, mistakes, reiterations, modifications (and why you made them), reflections, lessons-learned, results of development and testing, team decisions, your thoughts, the thoughts of your fellow team members (give credit where credit is due).

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***Keep it Honest*** If you make a mistake, draw a single line through the incorrect data. Do not erase or white-out any information. Any corrections that you made should be initialed and dated! Take responsibility for your work, mistakes and all!

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***Waste Not, Want Not*** Always use both sides of a page and never leave any blank space. If there is unused space on the page at the end of a session, 'X' it out and then add your initials and the date.

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***Photos and Outside Information*** To insert photos or other outside information, tape the item into your notebook and outline it in permanent ink. Doing this lets everyone know if something has fallen out your notebook.

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