

# TECHNICAL REPORT WRITING FOR ENGINEERS

## EQUATIONS AND NOMENCLATURE

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When adding theory to your report, it is likely that you will use equations. There are some common styles to use, however, the most important thing to be is consistent. If you adopt a style, make sure it runs through the whole of your report. An equation editor tool can help you to create equations properly. When you insert an equation into your document, adjust it so it appears centred and on its own line. This way it won't be confused with other parts of the report.

You will also need to number each equation. This could simply be one, two, three as the document progresses, or for larger documents, could include the chapter number. For example, the third equation in the second chapter might be 2.3. This number should appear separate from the equation, but still on the same line and make sure to use a different numbering style to the external references.

When you include an equation, you must always refer to it and explain it in the surrounding text. Otherwise, the reader won't understand why it's there. When referring the reader to the equation, do so using the number rather than using terms like 'in the equation below'. Once numbered, you can use this to refer to the equation from anywhere in your report. You don't need to write it out again.

Equations use symbols to represent physical properties. For example,  $F=ma$  is a shorthand way to express Newton's second law of force equals mass times acceleration. A symbol should be identical whether part of an equation in inline text or used to define its meaning. Capitals and lowercase are part of the definition and must be consistent as well as any formatting, such as bold or italic, and super or subscripts.

It's always important to define what each of these symbols is shorthand for as the reader may not know. You can either define as you go, directly after the first time it's used, or define all the nomenclature for all the equations in a dedicated section of the report. This latter option can be particularly useful for larger reports that have lots of equations with the same symbol referred to multiple times. This dedicated section is called the nomenclature section and appears at the start or, occasionally, at the end of the document.