

# Generic Manuscript Template

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%% [11pt,letterpaper]article % draft is an option for the documentclass but it buys us nothing here.  
It only inhibits the importing of images.

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## 1 Abstract

2 I draft the abstract after defining the scope of the paper with the Introduction and outlining the key  
3 results in the Results section and maybe the Discussion section. I usually rewrite the abstract after  
4 the first draft is finished. The abstract is often single-spaced. I enclosed the abstract in the *singlespace*  
5 environment.

## 6 1 Introduction

7 % The Introduction is not a literature review. % That is a separate class manuscript.

8 The first paragraph defines the scope of the problem and why it is important. It might cite several  
9 key contributions in the area [?, ?]. I like to use the author-year format to make it easier for reviewers,  
10 regardless of the required format. Numbered formats are harder to lookup. The last sentence should  
11 set up the first sentence of the next paragraph by hinting at possible approaches to the question or  
12 problem at hand.

13 The second paragraph starts with the central hypothesis that addressed the question or problem  
14 alluded to in paragraph one. This is followed by a summary of our approach. A sentence or two may  
15 be expended on a summary of what we found. The last sentence describes the audience of the article.

## 16 2 Materials and Methods

17 This section is a series of subsections that may or may not be in chronological order. This section is  
18 often placed after the Discussion section.

## 19 3 Results

20 Paragraph One: Map of the Results section. This introductory paragraph is usually missing, but no  
21 editor has ever asked me to delete it. This paragraph tells the reader in a little more detail than the  
22 Introduction what they can expect to see and the order in which the results will be presented.

### 23 3.1 Most important result

24 Cover the results in decreasing importance relative to the degree to which they address the central  
 25 hypothesis of the paper. If they have no relevance, save them from another paper. Chronological  
 26 order is usually a poor choice. End each paragraph with a conclusion.

27 Refer to tables and figures via their labels. For example, see the hot figure (Fig. ??). The num-  
 28 bering of the figures is handled automatically, so you can reorganize them without having to renumber  
 29 them.

### 30 3.2 Second most important result

31 See hot numbers in (Table ??). The numbering of the tables is handled automatically, so you can  
 32 reorganize them without having to renumber them.

### 33 3.3 Third most important result

34 Inline equations are placed between dollar signs:  $y = mx + b$ . Display equations are placed between  
 35 double-dollar signs or inside an equation environment. These environments are not floats. You can  
 36 define a custom float to enclose them and place them inside the float to enable the use of captions as  
 37 I did below. The *equ* environment is defined in the preamble.

$$i\hbar \frac{d}{dt} |\Psi(t)\rangle = \hat{H} |\Psi(t)\rangle \quad (1)$$

1: Eq. Schrodinger's time-dependent wave equation.

### 38 3.4 Fourth most important result

39 Code listings also have to be enclosed inside floats to have captions. The caption can be placed  
 40 above or below the code listing.

41 These environments need to be enclosed in the `singlespace` environment to retain single-line  
 42 spacing in the code block.

43 The `minted` package provides the syntax highlighting. The `-shell-escape` must be used on com-  
 44 piling.

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```

1  # import the necessary packages
2  from scipy.spatial import distance as dist
3  from imutils import perspective
4  from imutils import contours
5  import numpy as np
6  import argparse
7  import imutils
8  import cv2
9  def midpoint(ptA, ptB):
10 return ((ptA[0] + ptB[0]) * 0.5, (ptA[1] + ptB[1]) * 0.5)

```

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### 3.5 Fifth most important result

### 3.6 Sixth most important result

There could be up to four more subsections in a results-heavy paper.

There are usually four graphics and two tables in a minimal publishable unit. This is a weak guideline because of the trend to use multipanel figures. I have seen figures with ten panels. Is this one figure or ten?

Delete all results that do not address the central hypothesis or are less important.

## 4 Discussion

How our results relate to the results of others. (Avoid using merged Results and Discussion sections. They rarely work well. This is a research paper, not a seminar).

Paragraph One: Map of the Discussion section. This paragraph is usually missing, but it can orient the reader.

Paragraphs two and beyond must end with conclusions in their last sentences. The conclusion can be a call to do more research.

Lay out the topics in declining importance.

Delete the paragraph with no bearing on the central hypothesis.

## 61 **5 Acknowledgments**

62 Acknowledgments of core facilities and grant support. Double-check the grant numbers. It is easy to  
63 make typos in these. These acknowledgments are critical to the continued support of grants.

## 64 References

- 65 Acharya and Biswal, 2011. Acharya, S. and Biswal, M. P. (2011). Solving probabilistic programming  
66 problems involving multi-choice parameters. *Opsearch* 48, 217–235.
- 67 Luft et al., 2007. Luft, J. R., Wolfley, J. R., Said, M. I., Nagel, R. M., Lauricella, A. M., Smith, J. L.,  
68 Thayer, M. H., Veatch, C. K., Snell, E. H., Malkowski, M. G. and DeTitta, G. T. (2007). Efficient  
69 optimization of crystallization conditions by manipulation of drop volume ratio and temperature.  
70 *Protein Science* 16, 715–722.

## 71 List of Tables

72 Tables should be one per page.

73 The manual assembly of tables is a challenge for beginners. Pandas, R, and the Python package  
 74 `latex-table` <https://github.com/JAEEarly/latex-table> can write out  $\text{\LaTeX}$  tables. Tables are easy to  
 75 assemble in org-mode in Emacs and exported to  $\text{\LaTeX}$ . Markdown tables can be exported to  $\text{\LaTeX}$  with  
 76 `pandoc`. There are online tools to aid in the assembly of  $\text{\LaTeX}$  tables: [https://www.tables-generator.](https://www.tables-generator.com/)  
 77 `com/`.

78 The first table below was made with vanilla  $\text{\LaTeX}$ . The second table was made with the `booktabs`  
 79 package: The horizontal rules are of different weights in the latter table.

80 There is a *longtable* package for supporting tables that span more than one page. It is also possible  
 81 to have tables oriented in the landscape orientation via the *lscape* package.

**Table 1:** My summary statistics in the default LaTeX table. Dummy data.

Parameter	Group A	Group B	Group C	Group D
Length ( $\mu\text{m}$ )	100	150	175	250
Weight (ng)	10	50	40	50
Density (g/m)	0.01	0.03	0.09	0.77

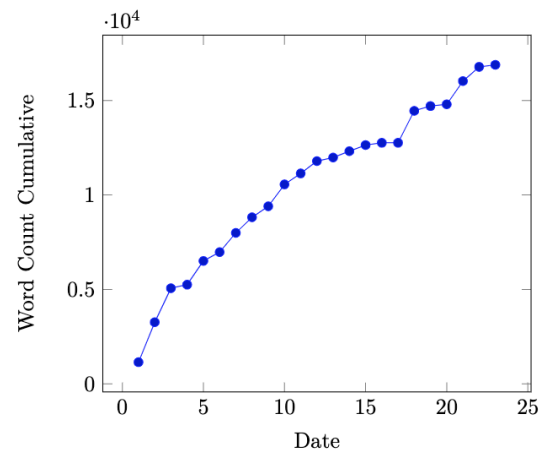


**Table 2:** My summary statistics made with the booktabs package. Dummy data.

Parameter	Group A	Group B	Group C	Group D
Length ( $\mu\text{m}$ )	100	150	175	250
Weight (ng)	10	50	40	50
Density (g/m)	0.01	0.03	0.09	0.77

## 82 **List of Figures**

83      One figure per page.



**Figure 1:** This beautiful graph relates X to Y.