

# An Illustrative Example on Submitting a Manuscript to NCJMS Using a $\text{\LaTeX}$ Class File `ncjms.cls`

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**ABSTRACT.** In this short template article we provide an illustrative example on the usage the basic style file for manuscripts submitted to the North Carolina Journal of Mathematics and Statistics. We show how to prepare a title page, explain how include bibliography and show few other simple and standard  $\text{\LaTeX}$  commands. Please follow closely. The journal style file builds on the `amsart.cls` style, so if everything else fails, your manuscript should at least work for that style.

## 1. Description of the `ncjms.cls` file

This article provides a description of the class file `ncjms.cls` that is to be used for the submission of manuscripts to the North Carolina Journal of Mathematics and Statistics. We also show a template document and explain basic features of how to use the style file for creating appropriate manuscripts for the submission.

### 1.1. Used styles and packages

The class file `ncjms.cls` builds on the standard  $\text{\LaTeX}$  class file `amsart.cls`. The class file is to be used together with the bibliography style file `apa.bst` to produce the bibliography section in the required format. The bibliography and references will be explained in more detail in section 4.

Once the class `ncjms.cls` is used, it automatically loads a number of different packages that are now a standard part of  $\text{\LaTeX}$  distributions. Thus, by using `ncjms.cls`, the authors do not need to load those packages on their own. The loaded packages include

- (i) `graphicx`, to include figures as explained in section 7
- (ii) `amssymb` and `amsmath`, to use a full range of math symbols
- (iii) `enumerate`, to be able to reference to items in an enumerate list
- (iv) `booktabs`, `multicol`, `multirow`, to create tables as explained in section 6
- (v) `hyperref`, to be able to produce pdf file with hyper-links and cross-references
- (vi) `natlib`, for proper bibliography as explained in section 4.

On top of the above mentioned packages, the class file `ncjms.cls` also loads the following (which can generally be ignored by authors)

- (vii) `color`,
- (viii) `times`,
- (ix) `fancyhdr`,
- (x) `lineno`,

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Received by the editors January 17, 2017.

2010 *Mathematics Subject Classification.* 11A11; 00B12.

*Key words and phrases.*  $\text{\LaTeX}$ ; submission; NCJMS; Separated by semi-colons; End with a point.

- (xi) type1cm,
- (xii) eso-pic.

## 1.2. Functions of the ncjms.cls file

The class file takes care of the format of the manuscript. The authors have to follow few simple rules specific for the amsart style file (most described in sections 3 and 4, and then the general rules for writing the manuscript in L<sup>A</sup>T<sub>E</sub>X. In particular, the style file takes care of proper fonts and font sizes and positions on the page for the manuscript title, authors name, affiliation, addresses, abstract, keywords, the body of the text and bibliography. It also takes care of the proper spacing an indentation, equation numbering, placing running heads. In general, the authors should not be concerned with any formatting issues at all and should not attempt to change those.

## 2. Basic structure of the L<sup>A</sup>T<sub>E</sub>X file written in the ncjms.cls

A manuscript for NCJMS should start with the command `\documentclass{ncjms}`. If author prefers not to see boxed references, they can use

`\documentclass[noref]{ncjms}`

which disables the boxes around references and citations. No other option of `ncjms.cls` is supported for authors.

Authors may include some additional packages they may need for their paper. Note that by default, `ncjms.cls` loads many packages automatically as explained in section 1.1. For example, this template file uses `\usepackage{verbatim}` in order to be able to use the `verbatim` environment to type the commands.

Authors can include their custom defined commands using the command `\newcommand`. For example, this template file defines a shortcut for writing  $\varepsilon$  by

`\newcommand{\e}{\ensuremath{\varepsilon}}`

One can also define commands with some parameters. For example

`\newcommand\sumtoinfty[1]{\ensuremath{\sum_{n=\#1}^{\infty}}}`

defines a command `\sumtoinfty` which has one parameter. Using

`\sumtoinfty{10}`

in a math mode then produces  $\sum_{n=10}^{\infty} a_n$ .

The authors are asked to limit the use of a command `\renewcommand`; and, if at all possible, avoid the use of this command completely in order to prevent collisions with journal formatting.

The actual document starts by a command `\begin{document}`. Immediately after that, the first page of the manuscript, with the title, author(s), abstract, keywords etc. is defined. This is described in more details in the section 3.

Right after that, there starts an actual body of the manuscript, usually by

`\section{Introduction}`.

Authors can include as many sections (each as many subsections, subsubsections, etc.) as needed in the body of the paper.

When the body of the manuscript is finished, the authors can include an unnumbered section Acknowledgements by a command

`\section*{Acknowledgements}`.

If an appendix is needed, include a command `\appendix` after which you may include several more sections.

This document ends by the following three commands

```
\bibliographystyle{apa}
\bibliography{yourbibfile}
\end{document}
```

The first two partially take care of the bibliography, more on in in section 4. The third command concludes the whole L<sup>A</sup>T<sub>E</sub>X document.

### 3. Top matter

Authors need to include several information in order to create the first page of the manuscript according to the journal guidelines.

First, the authors should specify the title of the paper. This is done by command

```
\title{ Title goes here }
```

Next, author(s) should specify what they prefer to have in the head of the papers for the running title. If the title of the manuscript is short enough, the running title should be same as the title of the manuscript. If the title is too long (such as in the case of this template), the running title should be an appropriately shortened version of the title. The authors should specify running title by a command

```
\titlerunning{ the running title goes here }
```

Then, all authors of the manuscript should be specified. `\author`, `\address` and `\email` are required.

Also, the authors should decide what running head they want for authors. Typically, the running head for the authors should be just a plain list of authors, separated by a comma and the last author separated by &. If the names of the authors are too long and/or there are too many authors, the running head with authors could contain the name of the first author and *et al.*. The authors should specify running head with authors by a command

```
\authorsrunning{ author(s) name(s) go here }
```

Abstract is entered within the following environment

```
\begin{abstract}
  Text of the abstract
  %
\end{abstract}
```

and authors should include the AMS subject classification which is done by a command

```
\subjclass[2010]{ ... } and also the keywords, which is done by a command \keywords{ ... }.
```

Use `\date` to include submission date. The command `\maketitle` concludes the part where authors include the information for the top matter.

### 4. Bibliography and references

Authors should use Bib<sub>T</sub>E<sub>X</sub> for references. You can use Google Scholar [scholar.google.com](https://scholar.google.com) to import the needed reference in the proper format. First, go to "Google Scholar preferences" and select Bib<sub>T</sub>E<sub>X</sub> as your Bibliography Manager. Now each search result in Google Scholar will have a link entitled "Import into Bib<sub>T</sub>E<sub>X</sub>." Click on that and you will get a text page that is the Bib<sub>T</sub>E<sub>X</sub> entry for that reference. Simply copy and paste it into your .bib file using your favorite text editor. The .bib file is just a text file with all the Bib<sub>T</sub>E<sub>X</sub> entries in it, one after the other.

TABLE 4.1. Using proper commands for proper citations.

command	sample result
<code>\citet{key}</code>	Jones et al. (1990)
<code>\citep{key}</code>	(Jones et al., 1990)
Multiple citations as normal:	
<code>\citep{key1,key2}</code>	(Jones et al., 1990; Smith, 1989) or (Jones et al., 1990, 1991) or (Jones et al., 1990a,b)
Full author lists may be forced	
<code>\citep*{key}</code>	(Jones et al., 1990)
<code>\citet*{key}</code>	Jones et al. (1990)
Optional notes as:	
<code>\citep[chap. 2]{key}</code>	(Jones et al., 1990, chap. 2)
<code>\citep[e.g., ]{key}</code>	(e.g., Jones et al., 1990)
<code>\citep[see] [pg. 34]{key}</code>	(see Jones et al., 1990, pg. 34)
Additional commands	
<code>\citealt{key}</code>	Jones et al. 1990
<code>\citealt*{key}</code>	Jones et al. 1990
<code>\citealp{key}</code>	Jones et al., 1990
<code>\citealp*{key}</code>	Jones et al., 1990
<code>\citeauthor{key}</code>	Jones et al.
<code>\citeauthor*{key}</code>	Jones et al.
<code>\citeyear{key}</code>	1990
<code>\citeyearpar{key}</code>	(1990)
<code>\citetext{priv. comm.}</code>	(priv. comm.)

There is no other special formatting needed from the author's end. There is not even a need for authors to sort the references in the bib file in some order. The style `apa.bst` which should be part of standard distribution will do all the necessary formatting and sorting.

However, it is strongly recommended that authors use proper commands for including the citations in the text. The two basic commands for citations are `\citet{key}` and `\citep{key}`. The first one produces an in-text reference with year in the parentheses, i.e. a citation to Walley (1991). The second one produces the citation in parentheses, i.e. (Weichselberger, 2005). More complicated scenarios are described in Table 4.1.

## 5. Math equations and numbering

To display mathematical equations, use  
`\begin{equation} math formulas here \end{equation}`

for numbered equations like (5.1) below. The numbering will automatically be in the journal required style.

$$E = mc^2 \tag{5.1}$$

The asterisk variant, i.e.

`\begin{equation*}` math formulas here `\end{equation*}`  
turns off the equation numbering, and is equivalent to typing `\[ ... \]`; compare

$$E = mc^2$$

with

$$E = mc^2$$

If you have multiline equations that need to be lined up at suitable places, use `\begin{align}` math formulas here `\end{align}`

$$(a+b)^3 = (a+b)^2(a+b) \tag{5.2}$$

$$= (a^2 + 2ab + b^2)(a+b) \tag{5.3}$$

$$= (a^3 + 2a^2b + ab^2) + (a^2b + 2ab^2 + b^3) \tag{5.4}$$

$$= a^3 + 3a^2b + 3ab^2 + b^3 \tag{5.5}$$

or if needed without numbers, then use

`\begin{align*}` math formulas here `\end{align*}`

$$(a+b)^3 = (a+b)^2(a+b)$$

$$= (a^2 + 2ab + b^2)(a+b)$$

$$= (a^3 + 2a^2b + ab^2) + (a^2b + 2ab^2 + b^3)$$

$$= a^3 + 3a^2b + 3ab^2 + b^3$$

In the code, a double backslash (`\`) is used to separate the lines, and an ampersand symbol (`&`) is used to indicate the place at which the formulas should be aligned. You can include more than one ampersand symbol per line to specify alignment at multiple columns, but the number of alignment symbols must be the same for each line of the display. Multiple alignments are rarely needed; in almost all cases a single alignment symbol, usually placed right before an equality (or inequality) sign, is enough. Mathematical formulas may also be displayed.

One can refer back to the equation (5.1) by inserting proper `\label{ key }` inside the equation environment and to referring to it anywhere in the document (even before the equation appears) by `\eqref{ key }`. Similarly, one can refer to any equation from the multiple line display (5.3). The labels have to go on the proper place of the display, otherwise they would refer to something else, see (5.5).

We can also use subequations environment to produce the following:

$$a = b \tag{5.6a}$$

$$c = d. \tag{5.6b}$$

TABLE 6.1. Caption to the Simple table comes here

A	B	C
1	2	3
4	5	6
7	8	9

## 6. Creating tables in L<sup>A</sup>T<sub>E</sub>X

Tables should be created inside the table environment as follows:

```
\begin{table}
  \begin{center}
    \caption{ Caption to the table comes here. }
    \label{ unique label comes here }
    \begin{tabular}{ parameters }
      . . .
      actual table comes here
      . . .
    \end{tabular}
  \end{center}
\end{table}
```

Few rules for producing a nice tables are

- (1) do not use vertical lines
- (2) use \toprule, \midrule, \bottomrule in place of \hline

A simple table can be created like Table 6.1

More complicated tables like Table 6.2 and 6.3 can be created using the multirow and multicolumn packages.

## 7. Including figures

Figures should be included inside the following environments:

```
\begin{figure}
  \begin{center}
    \resizebox{ desired size }{!} {
      \includegraphics{ name of the file comes here}}
    \caption{ Caption to the figure comes here. }
    \label{ unique label comes here }
  \end{center}
\end{figure}
```

Please use a high quality pdf files for the figures. The manuscripts will appear only online, so color figures are possible.

TABLE 6.2. A bit more complicated table

Team sheet		
Goalkeeper	GK	Paul Robinson
Defenders	LB	Lucas Radebe
	DC	Michael Duberry
	DC	Dominic Matteo
	RB	Didier Domi
Midfielders	MC	David Batty
	MC	Eirik Bakke
	MC	Jody Morris
Forward	FW	Jamie McMaster
Strikers	ST	Alan Smith
	ST	Mark Viduka

TABLE 6.3. Sales of the day

Item		
Animal	Description	Price (\$)
Gnat	per gram	13.65
	each	0.01
Gnu	stuffed	92.50
Emu	stuffed	33.33
Armadillo	frozen	8.99

## 8. How to submit

- (1) Go to NCJMS website <http://ncjms.uncg.edu/>
- (2) if you are not yet registered, click on "Register" to create your profile. Please note to check both, the **Author** and the Reader at the end of the registration form.
- (3) when registered as an Author, login into the journal. If you are registered to the Journal, but not as the author, please email Anna Craft at [arcraft@uncg.edu](mailto:arcraft@uncg.edu) and who may resolve the issue.
- (4) when logged in, click on [New submission] (in User home) and follow the 5 step process
- (5) Check the appropriate boxes and agree to the copyright
- (6) Upload the pdf file of your manuscript
- (7) Enter the metadata - authors, title, abstract, Mathematics Subject Classification
- (8) Upload additional files. This includes:
  - the tex file with the manuscript prepared using the `ncjms.cls` class file and all relevant files that will allow editors to process the file using pdf $\LaTeX$ . In particular, the authors should submit

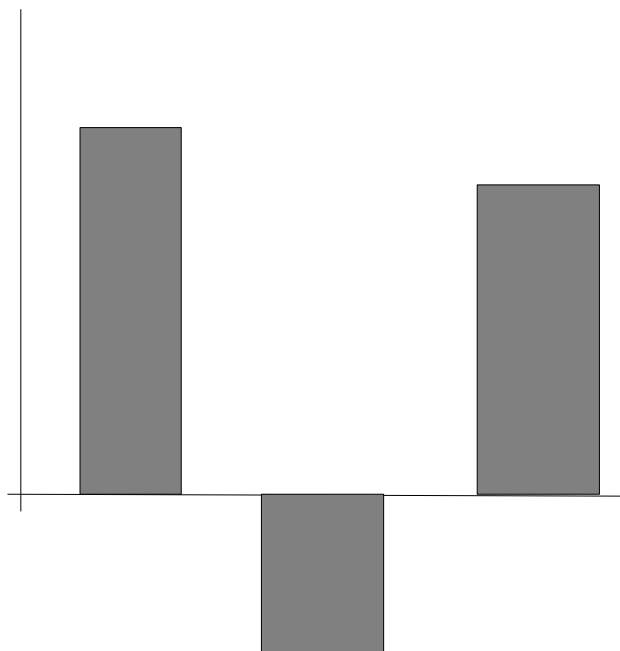


FIGURE 7.1. This is just an illustration of how to include a figure.

- the bib file with the references (more on it in section 4), and
- all binary images, graphs, etc. should also be sent as separate **pdf** files along with the manuscript.

The files need to compile well and with the correct formatting for the manuscript to be published.

(9) Confirm the submission.

## Acknowledgement

The work on this article would not be possible without the work of all the people involved in L<sup>A</sup>T<sub>E</sub>X typesetting. The author A. Name was supported by the NSF Grant #000000.

## Appendix A. Some additional comments

If something needs to go in the appendix, it comes here.

## Appendix B. Even additional comments

If one appendix is not enough, additional material can be put here.

## References

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