NAU POS LaTeX Template

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Introduction to LaTeX

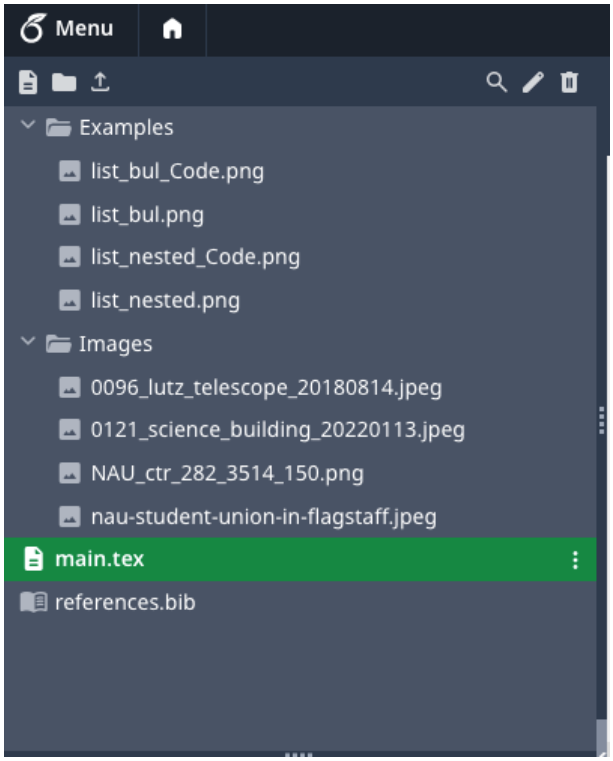
Welcome to POS 304 and 305 – Political Inquiry and Political Analysis. This short tutorial is meant to be read in the Overleaf ecosystem so that you can see the output in .pdf format and you can see the corresponding code that produces this document. You will also notice notes throughout the code that will not show up in the printed document. This template is set up so that you can copy and paste portions of it to produce your own work. There are examples of tables, figures, and lists that you will eventually need for your assignment papers. This document is also organized into sections that will help you when it comes time to producing longer papers.

You are expected to use this template for major papers this semester. This is a program called LaTeX, a typesetting program that is widely used in academia to produce professional looking documents. LaTeX is essential for academic students because it produces high–quality, professional looking documents, especially for papers with complex formatting, equations, citations, and tables. Unlike Microsoft Word or Google Docs, which are WYSIWYG (what you see is what you get) word processors, LaTeX separates content from formatting, ensuring consistent structure and style throughout your work. It is especially valuable in disciplines like mathematics, engineering, and the social sciences, where clarity and precision are critical. While Word and Google Docs are useful for collaboration and quick edits, they struggle with advanced typesetting and large documents. Learning LaTeX equips students with a powerful tool for academic publishing and scholarly communication.

The LaTeX programming language is very simple, but it will take some getting used to because it forces you to be intentional about how you present your work. It not only produces a better looking product, but it forces you to be more logical about the structure of what you are writing. Below are some examples you will use throughout the semester to produce your work. We will begin with very simple output, and eventually you will produce your entire political analysis using this program. In addition to LaTeX, you will need to use the statistical program called R (POS 305 students only) and a reference management system called Zotero. Together, these programs will give you the power to present your analysis the same way that academics do.

First things first

LaTeXwill compile all sorts of documents, figures, photos, .pdfs, etc. into a single document. In order for to do so, however, you need to upload those files into the library you see on the top left frame of the Overleaf program. Make sure you have your library window set up the way I have it so that this goes as smoothly as possible. Once you get the hang of Overleaf, you can organize your files any way you like.



Text

As you can see, LaTeX "looks" better, but it functions a little different than a standard word processor. You can still use *italics*, and you can **bold** your text, but you will need to do this intentionally by using the correct code. Fortunately, Overleaf gives you an interface that allows you to do this by highlighting what you want to emphasize and then clicking on the corresponding icon at the top. To underline, you will need to code it out manually. You can also cite your work very easily by uploading your bibliography ahead of time as a "bib file" and then using LaTeX to insert your citations (Cadena, 2023). We will look at citations in a bit.

Tables

When beginning a table, you must identify the number of columns and how you want the contents of each column to be justified, left (l), right (r) or centered (c). In Table 1 you can see that the table is labeled "wide". When labeling your tables, you can refer to them throughout the text so that the reader can click on the link and go directly to the table in the final product. For instance, you can refer to Table 3 so you can click on the hot link and go to that table in the pdf, similar to citations.

Use the table and tabular commands for basic tables — see Table 1, for a simple example. TablesGenerator.com is a handy tool for designing tables and generating the LaTeX code, which you can copy and paste into your article here.

Below are three examples of a basic tables you will need to create in class. First, a table with a simple list in Table 1, second a more complex table that lists items with multiple rows and columns in Table 1, and finally a regression table down in Table 3.

Simple Tables

I am presenting a number of examples using the tabular environment. The codes below give the basic structure of your tables. You can use the codes for the tables below or you are free to use an AI agent, such as ChatGPT, Claude, or Pilot to help you. While those AI tools are helpful, you need to know what to ask in order to take advantage of AI assistance.

1	2	3
4	5	6
7	8	9

1	2	3
4	5	6
7	8	9

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

Item	Quantity
Widgets	42
Gadgets	13

Minor Adjustments to Tables

The tabular environment can vastly change how your table looks if you are missing some simple instructions. Below are two tables with minor adjustments that illustrates how tables can look much better with some simple commands. The two tables below are the same with the exception of the simple instruction to limit the size of the last column.

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day with lots of sunshine. However, the strong breeze will bring down the tem
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most of Scotland
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early afternoon and c

Day	Min Temp	Max Temp	Summary
Monday	11C	22C	A clear day with lots of sunshine. However, the strong breeze will bring down the temperatures.
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most of Scotland and Northern Ireland, but rain reaching the far northwest.
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early afternoon and continue throughout the evening.

More Complex Tables

Below is a more complex table. You can use this as a template for a multi-column table.

Table 1: This is an example of a more complex table.

Speed (mph)	Driver	Car	Engine	Date
407.447	Craig Breedlove	Spirit of America	GE J47	8/5/63
413.199	Tom Green	Wingfoot Express	WE J46	10/2/64
434.22	Art Arfons	Green Monster	GE J79	10/5/64
468.719	Craig Breedlove	Spirit of America	GE J79	10/13/64
526.277	Craig Breedlove	Spirit of America	GE J79	10/15/65
536.712	Art Arfons	Green Monster	GE J79	10/27/65
555.127	Craig Breedlove	Spirit of America, Sonic 1	GE J79	11/2/65
576.553	Art Arfons	Green Monster	GE J79	11/7/65
600.601	Craig Breedlove	Spirit of America, Sonic 1	GE J79	11/15/65
622.407	Gary Gabelich	Blue Flame	Rocket	10/23/70
633.468	Richard Noble	Thrust 2	RR RG 146	10/4/83
763.035	Andy Green	Thrust SSC	RR Spey	10/15/97

Note: This is a caption note that is not "counted", like Table 3, Table **??**, etc. are.

Cross-tabulation Table

Table 2: Column Percentages by Social Class and EV Ownership (Q9 × Q24)

Social Class	Yes	No	I do not know
Upper class	25%	1%	0%
Upper-middle class	34%	13%	2%
Middle class	31%	39%	43%
Working class	9%	36%	36%
Poor	1%	10%	18%
Total	100%	100%	100%

Note: This is a caption note that is not "counted," like Table captions.

Regression Table

Table 3: This is an example of a regression table

	Dependent variable: $log(DependentVariable_{t-1}+1)$			
	(1)	(2)	(3)	(4)
Variable q	−0.512	−0.674	−0.421	−0.374
	(0.510)	(0.525)	(0.517)	(0.537)
Variable 2	1.108***	0.798***	0.784***	0.703**
	(0.288)	(0.283)	(0.275)	(0.288)
Variable 3	0.200	0.202	0.304**	0.285**
	(0.138)	(0.139)	(0.139)	(0.138)
Variable 4		−0.766***	−1.036***	−0.982***
		(0.254)	(0.255)	(0.251)
Variable 5		0.120	0.232*	0.260*
		(0.127)	(0.134)	(0.138)
Variable 6		0.341***	0.395***	0.357***
		(0.071)	(0.072)	(0.072)
Variable 7			0.232***	0.189***
			(0.034)	(0.036)
Variable 8			0.253***	0.206***
			(0.037)	(0.042)
Variable 9			0.060***	0.051***
			(0.008)	(0.009)
Variable 10			−0.018***	−0.012*
			(0.007)	(0.007)
Variable 11				0.329***
				(0.125)
Constant	0.275***	0.946***	−2.334***	−1.017**
	(0.056)	(0.298)	(0.439)	(0.475)
Obs.	32,658	32,658	32,658	28,200
Adj. R^2	0.371	0.374	0.389	0.429
F Stat.	2,756.800***	1,949.369***	1,485.940***	1,058.683***
Note:	*p<0.1; **p<0.05; ***p<0.01			

Images

As you can see in the code for this section, images are enclosed within a figure environment. LaTeX will sometimes try to position the figure/table/image where it thinks it fits best into the text. This can be frustrating, since you may disagree with LaTeX, but that is fine. To disagree there are many options. I tend to force LaTeX to put the figure where I have put the figure environment in my code as this often allows me better control of the image positioning. This is done using [H] on the same line as the `\begin{figure}` command. There are other places you can force the figure to be placed and these are covered in https://www.overleaf.com/learn/latex/Positioning_images_and_tables. Please see the annotated code for this chapter for an example.

Figure 1: University Union ©Northern Arizona University

Multiple Images

It is also possible to put multiple images next to each other to compare them. Please look at the code for the following images to see how this is done. Below are images where one is above the other, one is next to the other, and one is next to the other with both images within a gray box. You can see how the images are labled, and how both images are counted as one "Figure". Similar to the tables, you can label them so that you can refer them throughout the text, and you can refer to each particular picture within the figure, such as Figure 2 or Figure 3b

(a) Lutz Telescope, ©Northern Arizona University

(b) Kitt Science Bldg., ©Northern Arizona University

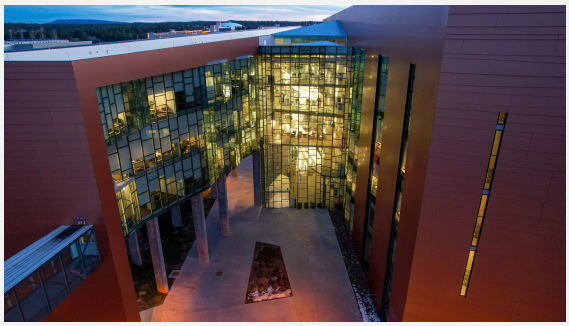
Figure 2: Multiple Images, one above the other

(a) Lutz Telescope, ©Northern Arizona University

(b) Kitt Science Bldg., ©Northern Arizona University

Figure 3: Multiple Images side by side

(a) Lutz Telescope, ©Northern Arizona University



(b) Kitt Science Bldg., ©Northern Arizona University

Figure 4: Multiple images side by side that are placed within a gray box

Lists

You often need to produce lists of things. LaTeX has a list environment that is easy to use once you get the hang of it.

You can make lists with automatic numbering using the `\enumerate` command ...

1. Like this,
2. and like this,
3. and also this.

You can also nest lists within lists, such as below. The code for the nested lists and the product of the code are below, inserted as two figures side-by-side with a line between the two figures.

```
\begin{enumerate}
\item The first item
\begin{enumerate}
\item Nested item 1
\item Nested item 2
\end{enumerate}
\item The second item
\item The third etc \ldots
\end{enumerate}
```

(a) LaTeXCode

1. The first item
   (a) Nested item 1
   (b) Nested item 2
2. The second item
3. The third etc ...

(b) Ouput

Figure 5: Nested Numbered List

You can do this with bullet points, as well, using the `\itemize` command ...

```
\begin{itemize}
\item The first item
\begin{itemize}
\item Nested item 1
\item Nested item 2
\end{itemize}
\item The second item
\begin{itemize}
\item Nested item 3
\item Nested item 4
\end{itemize}
\item The third etc \ldots
\end{itemize}
```

(a) LaTeXCode

- The first item
  - Nested item 1
  - Nested item 2
- The second item
  - Nested item 3
  - Nested item 4
- The third etc ...

(b) Ouput

Figure 6: Nested Bulleted List

Quotations

You can quote text using the quote command or you can use simple open and closed–ended quotes. However, opening quotes in LaTeX is different. You have to type the single apostrophe above the tab key twice, ie. '' and then you can use the standard quotes key next to the enter button on the right side of your keyboard to close your quotes. You will notice that the open and closed quotes look different when ''using the open quotes'' than if you used "closed quotes" button for both the open and end quote symbols.

> ''This is a sample quotation text. This is a sample quotation text. This is a sample quotation text.''

Citing and Bibliography

The bib (in this project it is labeled ''references.bib'' and other files referred to in this document, such as images and logos, are uploaded into the project management section of Overleaf in the top left window. It is wise to keep these files organized, but we will go over that in class. You can use ''in text'' citations, such as my mentioning of the Ramírez (2013) article that is already uploaded into my project folders. The beauty of this is once you collect your resources, you will never have to worry about producing your Works Cited page again. The LaTeX program will do that for you (Barreto, 2007).

Here is how you can cite an author such as Bishin and Muttram (2024) within the text, and here is how you cite a work out of text Bishin and Muttram, 2024. You will notice that once you upload your bibliography, when you use the `\cite` command and `\intext` cite commands, your library of references will show up as a drop-down menu. You can begin typing a reference and the program will call up your references using those search terms. Once you use your `\textcite` and `\cite` commands to insert references, LaTeX will generate your bibliography for you in alphabetical order, and it will create hotlinks directing the reader to the referred citation. You can place your bibliography anywhere on your paper, usually at the end, but here it is below.

References

Barreto, M. A. (2007). ¡Sí se puede! latino candidates and the mobilization of latino voters. American Political Science Review, 101(3), 425–441.

Bishin, B. G., & Muttram, H. G. (2024). When are identities politically consequential? identifying conditions of descriptive, substantive, and allied group identity? [Place: Berlin Publisher: De Gruyter]. The Forum : A Journal of Applied Research in Contemporary Politics, 21(3), 339–357.

Cadena, R. S. (2023). Paradoxical politics? partisan politics, ethnoracial ideologies, and the assimilated consciousnesses of latinx republicans [Place: Los Angeles, CA Publisher: SAGE Publications]. Sociology of race and ethnicity (Thousand Oaks, Calif.), 9(3), 295–310.

Ramírez, R. (2013). Mobilizing opportunities: The evolving latino electorate and the future of american politics. University of Virginia Press.

Useful links

Before you use the links below, you can see how links are generated in LaTeX. You can use the `\href` or the `\url` commands, depending on how you want your links to show up in your document.

- `library(tidyverse)`
- `data <- read_csv("file.csv")`
- `summary(data)`

Now lets get to the links.

- https://tablesgenerator.com/latex_tables
- Tables Generator for converting your tables to LaTeX code
- Resource explaining LaTeX document structure
- Documentation on the tabular and table environments

Assignment

OK, now your turn. I am going to ask you to create new subsections and include your own output.

Header Information

Text

Quote

Simple Table

Image

Referencing Tables and Figures

Citations

References

Links

Compile, Upload, and Submit