

# An Introduction to L<sup>A</sup>T<sub>E</sub>X Using Scientific Word

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# 1 Getting Started

## 1.1 What Are We Doing Here?

Let us begin by getting some of the very basic terminology down. The primary aim of this short course is to familiarize you with a typesetting language called  $\text{\LaTeX}$ —pronounced “LAY-teck,” “LAH-teck,” or sometimes “luh-TECK.” This is NEVER pronounced “LAY-tecks.”

$\text{\LaTeX}$  has several important pleasant qualities; most notably, it produces beautiful, stable, professional-quality documents with excellent typesetting for mathematics. It also has the disadvantage of requiring some learning on the front-end—hence the need for this short course.  $\text{\LaTeX}$  is a computer language of sorts; instead of seeing the output on the screen as it is typed in—as is the case when using Microsoft Word or other similar programs, often called WYSIWYG for “What You See Is What You Get”—one inputs a certain amount of text according to certain rules and then compiles that text to produce a final object.

Happily, we will be utilizing a program—Scientific Word—that simulates the feel of a WYSIWYG program, right down to the handy little buttons to click on for certain commands. This short course is primarily aimed at getting you proficient in Scientific Word so that you can typeset your own documents. We will cover all the basics that one might encounter in a standard  $\text{\LaTeX}$  course, but we will handle those basics through the lens of the Scientific Word environment. In particular, we will focus on:

1. Basic typesetting. How am I making this numbered list? *How did THESE pretty fonts happen?* How to center a phrase? That kind of thing.
2. Math typesetting. For example, how would one typeset the probability density function of a normal distribution?

$$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

3. Making tables. If I wanted to summarize the results of an estimated regression model, it might look like this:

SUMMARY OF RESULTS				
Variable	Coefficient	S.E.	<i>t</i>	Pr
Intercept	3.352	0.311	10.77	< 0.000
<i>x</i>	-2.075	0.053	-39.07	< 0.000
SEE	4.871			
$R^2$	0.6047			

4. Some additional odds and ends: adding pictures, using  $\text{\LaTeX}$  to make presentation slides, etc.

## 1.2 Creating, Saving, Previewing, and Compiling a File

So, let's not delay the fun any longer. To begin, let's open a new file in Scientific Word. The first time you open Scientific Word, the usual “*welcome!*” message will pop up. After dismissing it, Scientific Word will produce a window that asks what kind of file you would like to open. The default setting is “Standard L<sup>A</sup>T<sub>E</sub>X” on the left Shell Directories menu, and “Blank - Standard L<sup>A</sup>T<sub>E</sub>X Article” on the right Shell Files menu. This will be what we work with most of the time; observe that if we wanted to use, say, a certain journal's formatting requirements, we could select it from this interface. So too could we choose to make presentation slides, etc.

After clicking “OK,” the basic Scientific Word screen pops up. At the moment, it's a pretty stark interface. At the very top, you should see a standard set of menus just like in Word—the usual File, Edit, Insert, etc. A few are new—for example, you probably hadn't had to Typeset out of Word. We will use these as we go. Just below, you should see a small number of buttons; again, many (like opening and saving files) are familiar from Word, while others (like the ominous Big T) are new. At the bottom of the screen, you should see some pull-down menus, including one currently set to “Body Text.” This is our starting position, and this course will be designed around adding new sets of buttons and learning how to use them.

But before we can do that, let's get some of the very basics down. You should have a cursor at the top of your white working space; type the following there—without the quotation marks: “My name is (insert your name), and I am pretty gosh-darned happy to be sitting in this class.” It looks just like Microsoft Word! But, this is not what the finished document will look like. What *will* it look like? Well, to find out, click on the Typeset menu at the top of the page, and then select “Preview PDF.” After a very quick moment of compiling—which will include a pop-up window that reports how the process is going—a new PDF should emerge that shows your new document in its professional, PDFed incarnation. Congratulations! You've just made your first document in L<sup>A</sup>T<sub>E</sub>X.

The astute among you likely noticed that there was an option underneath “Preview PDF” that was ghosted—this was the “Compile PDF” option that will be best for when you're done with a document. This requires that we save our file in Scientific Word. The compiling process in L<sup>A</sup>T<sub>E</sub>X creates several files, and so it's a good habit to make a new folder for every document you make. This way, your Scientific Word file—which is saved as a `.tex` file that can open in any text editor—will be accompanied by the final PDF and all the little files required. So, let's make a new folder on the Desktop where we'll save today's work. You know how to do so, right? Right-click on the Desktop, select “New,” then select “Folder.” Name the folder whatever you'd like, then return to your Scientific Word window. Click the Save button (indicated by a disk) and save the file in the new folder like usual.

After doing so, click on “Typeset” again, then select the newly-unghosted “Compile PDF” option. Once that’s complete, the folder you created will have the `.tex` file, the PDF, and all the incidentals required.

### 1.3 Adding Some Toolbars

With that complete, we can turn our attention to learning more about typesetting nuances. Let’s begin by tweaking the sentence you just wrote. After all, the word “gosh-darned” is pretty informal and should be put in quotation marks. So, put regular quotation marks around the word and click “Preview PDF.” Observe that the end result looks pretty bad. Why is this? Well, in  $\LaTeX$ , that’s now how we make quotation marks. So, delete what you just added. Instead, on the left side of “gosh-darned,” press the ‘ twice—that’s the button with the tilde at the top left of the keyboard—and on the right side, press ’ twice—that’s a simple apostrophe. Click Preview again, and observe that the quotation marks are now pretty.

But that is annoying to remember, and  $\LaTeX$  has *way* too many neuroses to keep track of. This is where Scientific Word will be handy for us. Click “View,” then select “Toolbars.” On the menu that follows, click the box next to “Symbol Panels.” A new set of buttons should appear at the top of the screen. These include several buttons that will be very helpful for us moving forward, including Greek letters, basic mathematical symbols, and, at the far right, basic punctuation! Observe that we can click on buttons for quotation marks, dashes, and whatever else might seem fun. For example, one  $\LaTeX$  neurosis is that there are three ways to use a dash or hyphen:

1. If I want to use a hyphenated word, I press the - button once.
2. If I want to put a dash between numbers, like in 1816–1825, I press it twice.
3. If I want a grammatical dash to break up lines, I press it thrice—like so.

This is addressed with buttons in Scientific Word, which makes life much easier! Not all of the buttons on this new toolbar will be helpful to us just yet; for example, all of the mathematical symbols will be used later. For now, let’s stick to words.

Let’s activate another helpful toolbar. Again, click “View,” then “Toolbars.” Now select the “Editing” button. As you noticed, this introduces typical editing commands like boldface, italics, etc. To use these, first type in your text normally into Scientific Word. Then, select the text you want to alter. Then click the button in question. For example, if I want to say “I missed the putt by *this much*,” I should type the entire sentence, then select “this much,” and then click on “emphasize.” Take a moment and familiarize yourself with these buttons.

## 1.4 Applying a Tag

Not all of the things you can pull off are included in the buttons—just many of the basic ones are included. But, no worries. We can apply a host of commands with a simple right click. Suppose we want to make a word larger. Simply type the word, then highlight it. At the bottom of the screen, to the right of the pulldown menu that says “Body Text,” you can select from a host of options, including:

tiny	Smallest available font
small	Still pretty small
normalsize	As you’d guess, it’s regular
large	Just a tad bigger
Large	Bigger still
LARGE	Much bigger
huge	Even bigger still
Huge	Wowie zowie that’s big
Sans Serif	A handsome sans-serif option
Typewriter	An equally handsome typewriter option
Small Caps	ANGRY ALL-CAPS LETTERS!

Alternatively, you can right click on any text and select “Apply Tag.” Note also that you can remove tags with the pulldown menu to the left.

With that handled, let’s think about things at the paragraph level. So far, we’ve only played around with a sentence or two; if we want to introduce new paragraphs, what to do? Thankfully, the process is intuitive in Scientific Word. To start a new paragraph, simply press “Enter.” The screen itself doesn’t show a paragraph change, but if you Preview the file, you’ll see the new paragraph included. To add a new paragraph with some space in between, press “Enter” twice.

So now we can produce several paragraphs of writing, each of which can be composed of sentences with typeset words. We can also organize our document by using sections. Just as before, we do this with the select-the-text-then-select-a-new-tag technique, this time from the center pulldown menu. This time, we will select the appropriate kind of heading: sections come first, then subsections, then subsubsections, and so on. Observe that, when you do so, Scientific Word shows the words larger on the screen and applies a blue color to offset them. Notice also that we can use this technique to center words or sets of words, or to move them flush-left or flush-right.

Finally, this is a good way to get bullets and lists into the document; this time, we will use the leftmost pulldown menu. For example, if we right click on a line of text and select “Bullet List Item,” we see a bullet appear on the screen next to our highlighted line. For numbered items, we click “Numbered List Item.” To make something a

subitem—for example, if you want (a) and (b) to pop up under a number 1.—then just apply the tag multiple times.

## 2 Basic Math Typesetting

### 2.1 Math Mode

We now move on to basic math typesetting.  $\text{\LaTeX}$  typesets input different depending on the mode that it is in; up to this point, we have operated in *text* mode. To typeset mathematics, we will need to enter *math* mode. This is not all that difficult to do; in Scientific Word, there is a button at the top of the screen with a large black “T.” The T lets us know that we are operating in text mode. Clicking on this button once will change the black T to a red M—this means that we’re in math mode. You can use the button to toggle between the two modes.

Absent commands to tell it to do otherwise,  $\text{\LaTeX}$  will enter mathematics-mode input as if it were part of the sentence; that is, unless I tell it to do differently, my content will show up in the middle of my paragraph. For example,  $4x = 24$  just pops right into the sentence like any other word would.

So, let’s do some basic math. In Scientific Word, switch the Black T to a Red M to enter math mode. In the working space, type a basic mathematical equation:  $2y - 19 = 647$ . As usual, Preview PDF the document to see what it looks like. You should have a clean-looking equation featuring an italicized  $y$  inside the formula. Notice also that you can toggle between modes within one line; for example, enter the letter “x” in text mode, then enter it again in math mode. In the Scientific Word window, this will mean that you’ve got a black x and a red x. Now, Preview PDF it. Observe that two different kinds of letters pop up; one is a text x, and the other is an italicized math  $x$ .

In general, entering math mode this way is the easiest way to start your math typesetting. Observe that, just as with anything else in Scientific Word, you can choose to enter math mode before or after entering text. For example, if you’re typing a paragraph that has a few little incidental mathematical expressions in it, you might want to type the entire paragraph, highlight the mathematical parts, and click on math mode. If you’re entering a large mathematical expression in itself, you might want to go straight into math mode before getting started. It’s up to you.

### 2.2 Math Templates

Before we delve deeper into math typesetting, let’s arm ourselves with some new toolbars. To do so, again click “View,” then select “Toolbars.” Click on the box next

Math Templates. We've got quite a few toolbars going now, so you might want to drag and drop them to come up with a better set-up to suit your eye.

Let's review what these buttons mean. Generally, these are for getting the location of mathematical formulae correct. Give these each a shot as we go along.:

1. The leftmost of these is a fraction button, as is evidenced by the two red boxes above a black line. Clicking on this button places an empty fraction into your document; you can click on the empty box above or below the line to add the numerator and denominator. Notice that Scientific Word automatically enters math mode when you click on the fraction button, so whatever you add will already be in pretty math format. So, clicking on the button and adding letters will get you something like  $\frac{3x}{4y}$ . Entering a space or moving to the right with an arrow button will get you out of the fraction.
2. To its right is the square root radical. This is easy enough to work with—clicking on it gives you an empty box inside a radical, which results in something like  $\sqrt{58}$ . Again, you can get out of the radical with a right arrow or a space.
3. Next come buttons for superscripts—like this,  $8^3$ —and subscripts—similarly,  $b_i$ . Notice that you can add more than just one character in a subscript or superscript, and you can use them simultaneously—for example,  $x_{ij}^t$ .
4. The next two buttons are handy for adding parentheses and brackets; clicking on them gives you a paired set. What's really cool about these is that they automatically adjust to the correct size. For example, click on the bracket button, then click on the fraction button. The brackets automatically get a little taller to accommodate the fraction!
5. Next up is the summation operator, as evidenced by the capital  $\Sigma$ . Often in formulae you'll see this with letters and terms at the top and bottom of the  $\Sigma$ . You can use subscripts and superscripts to achieve this effect in basic math mode. So, click on the summation button, then click on the subscript button. In the new box, add  $i = 1$ . Now click on the right arrow to get out of the subscript box, and click on the superscript button. In the new box, add an  $n$ . The end result should look like  $\sum_{i=1}^n$ .
6. The button to the right is the symbol for integrals:  $\int$ . Just as with the summation operator, you can use subscripts and superscripts to achieve the required effect if need be: for example,  $\int_{3x}^{\infty}$ .
7. Finally, there is a button that inserts appropriate symbols for many basic units, such as feet, pounds, and the like.

This is a really handy set of buttons, and you'll want to keep it in a prominent spot on your workspace.

## 2.3 Math Objects

Now let's add yet another toolbar—click “View,” then “Toolbars.” Now add the Math Objects toolbar.

Again, let's review these button by button. These help to make the typesetting look much more professional and add flexibility to the buttons we just reviewed:

1. The leftmost button is a doozy. This is the Display button, and it takes the math mode into a new environment that will be very helpful for us. To illustrate just what it does, clear your entire workspace. Enter text mode, and enter some text. Now click on the Display button. Notice that the cursor is taken to the center of the page, and that you've entered math mode. Now you can type math like usual, but it will appear in the center of the page and with more readable qualities. What kind of qualities? For example, if you add a summation operator in Display mode, the subscripts and superscripts will automatically be placed above and below the  $\Sigma$ , as in

$$\sum_{i=1}^n x^i = 16$$

Notice that if you hit enter while in the display, you can add another formula. What's more, it will automatically align all the formulae in the cluster by the sign in question—in this case, we can align by equation symbols. So we can have something that looks like

$$\begin{aligned} \sum_{i=1}^n x^i &= 16 \\ 3x + 2y &= 12 \end{aligned}$$

2. The button directly to the right of the display button, which shows a  $\Sigma$  and a  $\int$ , is what you'll want to use to achieve such effects around big operation signs like  $\sum$  or  $\prod$  or  $\cup$ . Clicking on it will cause a new window to pop up that allows you to do a host of new things, including products ( $\prod$ ), multiple integrals, and so on.
3. To the right of that is a button that allows for more kinds of brackets, parentheses, and the like. For example, you can use this button to typeset absolute values ( $|x|$ ) or to add braces ( $\{x\}$ ).
4. Next comes a button for adding arrays of mathematical elements. Clicking on this button causes a new popup window to appear. You can set the size of the array in question—for example, a  $2 \times 2$  matrix or a  $9 \times 4$  array, or whatever—and add them to the new template that appears in the workspace. This window also allows you to center the array and to add the appropriate delimiters—for example, brackets for a matrix.



5. The next button includes a host of mathematical function names that are written in text—for example, “sin” for the sine function or “lim” for a limit. You can find just about any term you’ll need in this window.
6. The next button includes more fraction options—for example, you can make a binomial term like  $\binom{6}{2}$ , or you can add any kind of delimiter outside of a fraction.
7. The next two buttons allow you to add decorations above a term added—for example, you can put terms of your choosing above a mathematical term, or you can add a hat ( $\hat{x}$ ), tilde ( $\tilde{x}$ ), and the like.

## 2.4 Tying Things Together

A few things to put what we’ve done so far into perspective:

1. Notice that you can embed all of these new commands relatively intuitively by working outside-in. For example, suppose you want to make a fraction that looks like

$$\frac{8^x}{\sqrt{\frac{2}{3}}}$$

How would you do that? Things are a lot easier if you do a little bit of thinking first. Observe that the primary thing going on here is the fraction itself. So, click on the fraction button first. Now, inside the numerator box, you can add the  $8^x$  like always—type “8,” then click on the superscript button, then type  $x$ . Now head on down to the denominator. What do we need first? Clearly, the outside command is the square root one—so click on the square root button. Now we need a fraction inside the radical—so click fraction. Now add your fraction terms like always, and you’re done!

2. We now know three basic environments:
  - (a) Text mode, which is the default. We can get there by clicking to the Black T.
  - (b) Basic math mode—we get there by clicking to the Red M. This puts math into the text rather than in the middle of the page by itself.
  - (c) Displayed math mode, which allows for more effects. We get there by clicking on the Display button.
3. We are working with many toolbars:
  - (a) Editing: basic boldface, italics, and so on. Remember that we can achieve more kinds of text effects by adding tags using the pulldown menus at the bottom of the screen.

- (b) Symbol Panels: a lot more of these are now helpful to us. We can add lowercase or uppercase Greek letters, mathematical operators like  $+$  and  $-$ , symbols, Latin and other kinds of typeface, and basic grammatical stuff.
- (c) Math Templates: basic fractions, radicals, subscripts, superscripts, and the like.
- (d) Math Objects: a powerful set of buttons that lets us make beautiful and varied formulae in Display mode.

## 3 Some Fun Document Miscellany

### 3.1 Packages: The fancyhdr Example

Today, we'll get a little bit more into the workings of  $\LaTeX$ , and we'll learn how to do several important tasks while doing so. First, let's apply a fancy header to our document. You might have seen this kind of thing before; the top of the page will feature a line, and headers fall above the line at the left, center, and right of the page. Lots of people use this often, so it's an important skill to pick up.

$\LaTeX$  uses *packages* to maintain flexibility; there is a default bunch of packages included in Scientific Word, but some need to be added. In this instance, we'll need to tell  $\LaTeX$  to use the `fancyhdr` package. To do so, let's do the following:

1. Click on the "Typeset" menu button, then select "Options and Packages."
2. This causes a new window to pop up. It has two tabs: "Class Options" and "Package Options." Highlight the "Package Options" tab.
3. There shouldn't be anything in the window right now. Let's add a package by clicking "Add."
4. Scroll down to "`fancyhdr`." Highlight it and click "OK."
5. "`fancyhdr`" should now appear in the window. Our work here is done; click "OK."

So, that is half the battle won. We now need to get into the actual  $\LaTeX$  code to set the options we want for our page style. We will operate within the preamble of the code. So, do the following with me:

1. Again, click "Typeset." This time, choose "Preamble."
2. Again, a window pops up. This one has all kinds of weird stuff going on—this is  $\LaTeX$  code that sets up the document in a certain way. We want to make a mild tweak to get fancy headings.

3. First, we need to change the style of the page. The default is “plain,” which doesn’t have the line at the top. We want to change this to the “fancy” option. This is easy enough; underneath all the weird code—the last should be setting a new environment—type `\pagestyle{fancy}`.
4. Let’s add the headings we want. To show all three kinds of headings, do the following:
  - (a) Under your last command, enter `\lhead{Left Heading}`
  - (b) Under that, enter `\chead{Center Heading}`
  - (c) Under that, add `\rhead{Right Heading}`

That’s all we need! So, type some jibberish into the document and Preview the PDF. You should see your headings in the new document with a very fancy header if I may say so myself.

## 3.2 Basic Document Properties

Let’s use packages to handle some basic document properties like spacing and margins. First, we’ll achieve doublespacing by using the `setspace` package. Same as before:

1. Click “Typeset,” then select “Options and Packages.”
2. From the “Package Options” table, click “Add.”
3. Scroll down to `setspace`; highlight it and click “OK.”

But now we’ve got a new option to get the spacing right. On the “Package Options” tab, highlight `setspace` click “Modify” next to “Currently Selected Options for the Package `setspace`.” From here, we can simply click the line spacing we want—double spacing, one-and-a-half spacing, etc. Select double spacing. If you Preview your PDF with this in place, you’ll notice that the document is in fact double spaced. Easy.

Now let’s handle our margins. This time, we will use the `geometry` package. You know how to get it going, right? Same as with `fancyhdr` and `setspace`—just click “Typeset,” then “Packages and Options.” If you check out the options for the `geometry` package, you’ll see that it will let us manipulate the typesetting in a lot of ways. To get the margins how we want them, though, we’ll need to get into the Preamble again. So, click on “Typeset,” then “Preamble.” Underneath your additions for the headers, type the following:

```
\geometry{left=1in,right=1in,top=1in,bottom=1in}
```

As you may have guessed, these manipulate the left margin, right margin, top margin, and bottom margin in turn. Preview the PDF, and you’ve got yourself some smaller margins!

A note on packages: obviously there are a lot of packages in L<sup>A</sup>T<sub>E</sub>X. There isn’t enough time to make a course on how to use them all, but most packages have a manual that is easy enough to find via **Google** or the like. L<sup>A</sup>T<sub>E</sub>X has spawned a pretty big and helpful community of people that write new code all the time, and so finding help is never hard. When in doubt, look up the T<sub>E</sub>X Users Group at [tug.org](http://tug.org), and you should be able to find some help on how to use packages as needed.

### 3.3 Front Matter

Let’s switch gears. Many articles or sets of technical notes include what we call “front matter,” which includes stuff like the author(s) of the paper, the date, an abstract, and a table of contents. Let’s learn how to add these in Scientific Word.

Our first step will be to add a new toolbar. Click “View,” then select “Toolbars.” Add the “Typeset” toolbar, which includes many commands we have been using a lot already—like Preview PDF and Packages and Options—and a few new ones. The one we’re interested in at the moment is the one that’s second from the left: Front Matter. This causes a new window to pop up that looks a lot like an empty document in Scientific Word. We will add the following items:

1. Write your name. Then, highlight your name and, from the leftmost pulldown menu at the bottom of the Scientific Word window, select “Author.”
2. Hit enter to go to the next line, then remove the author tag by clicking the green-arrow button at the bottom left corner. Now, type the date, and apply the “Date” tag.
3. Hit enter again, remove the date tag, and write “Day Three Example.” Now add the “Title” tag.
4. Now, we want Scientific Word to include these at the top of our document. To do so, go to the next line and remove all tags. Don’t type *anything*. To this empty line, apply the “Make Title” tag.
5. Hit enter again, and remove the make title tag. Now we want to add a Table of Contents. Easy enough—again, don’t type anything, and apply the “Make TOC” tag.
6. Hit enter one more time. Now we want to add an abstract. Again, easy enough: type up a few sentences, highlight then, and add the “Abstract” tag.

Close the Front Matter window, and preview your PDF. You should see all of your information added at the top of page one. Nice work. Notice that the Table of Contents is handled automatically and will include all of the section, subsection, etc. headings.

### 3.4 Graphics

Including pictures in Scientific Word is really easy. Suppose you wanted to add a picture that you had saved on your computer. In your document, wherever you were planning on including the picture, you simply do the following:

1. Click the “File” menu, then select “Import Picture.”
2. A window pops up; find your file where you saved it and click OK.
3. You should see your picture pop up in the document itself.

This is really handy, since you can manipulate the picture directly in the document. For example, if it’s too big, you can highlight it and click on one of the black boxes on the corners of it to resize it. Or suppose you wanted to add a caption to your picture. Very easy: right-click on it, then select “Properties.” In the window that follows, simply type your caption into the box marked “Caption Text.” You can also determine if you want your picture to be typeset directly into the text, at the top of the page, at the bottom of the page, etc. by going to the “Layout” tag and using the appropriate menu buttons. Quite intuitive, and way easier than in regular L<sup>A</sup>T<sub>E</sub>X!

## 4 Some More Miscellany

### 4.1 Tables

Often you’ll see tables in quantitative notes—generally, these are to summarize the results of a statistical model or to display a bunch of calculated statistics. We can make these quite easily in Scientific Word. The basic starting position will be an empty table comprised of rows and columns of entries. To create such a table, click on the “Insert” menu, then select “Table,” which is about  $\frac{2}{3}$  of the way down the list. A new window will pop up. Here, you can set the dimensions of the table (though you can make additions later as well) and determine the horizontal alignment of the entries in each column and the vertical alignment in each row. Let’s make a  $3 \times 3$  table for now.

You should see an empty table in your Scientific Word work area now. In the 9 spots, enter 1,2,3,4,5,6,7,8, and 9. If you preview the PDF from here, you’ll get something like

1	2	3
4	5	6
7	8	9

Observe that we can do some formatting on the fly in Scientific Word. For example, we might want to put a vertical line between the first and second column. Easy enough—just highlight the left column with your mouse, then right-click on it. From here, select “Properties.” A new window will pop up, and observe that you can decide what kind of lines you’d like to add in the middle tab, entitled “Lines.” Click on “Single Line” under “Line Style.” Next, choose the right line position. You should see a preview in the window. Click “OK,” and the line will appear in your table in the interface. If you preview the PDF now, you should get something like

1		2	3
4		5	6
7		8	9

A common formatting practice is to put a double-line above the top row. Again, simply highlight the top row, then right click and select Properties. This time, select a double line under Line Type and put the line Above. Assuming you hadn’t removed the line we just created right of the first column, your PDF should now resemble

<hr/>			
1		2	3
4		5	6
7		8	9

Notice also that L<sup>A</sup>T<sub>E</sub>X automatically handles column width for you. If you’d like to change the column width, however, you can do so manually. Highlight the column you want to change, then right click and select Properties. Highlight the right tab, named “Column Width.” From this interface, you can set manual column widths with ease.

One final thing to note about tables. Often you’ll see a table that looks something like this:

1	2	3
4	5	6
7		8

Observe that the bottom-left and bottom-center cells have been merged. This is easy to create in Scientific Word—simply highlight the cells that you would like to merge, right click, and select “Merge Cells.” Observe that you can only merge across columns—not across rows.

## 4.2 Footnotes and Endnotes

Technical and academic papers are rife with footnotes and endnotes. Happily, we can enter these into our document quite easily with Scientific Word. In your Scientific Word document, type a sentence—say, “I like using Scientific Word so much.” Ensure that your cursor is at the end of your sentence, then click “Insert” and select “Note.” A new window will appear. In the text section of the box, type “This is a complete lie.” On the right side of the new window, you can order the program to add your new entry as either a footnote at the bottom of the page or as an endnote at the end of the document. I generally prefer footnotes, and everybody has their own preferences.

Click “OK,” and you should see a gray button that says “Footnote” or “Endnote” where you entered your note. Double-clicking this will cause the window to appear again in case you need to make changes. Quite easy!