

Creating a Thesis with Microsoft Word

Jeff Balvanz

ISU Information Technology Services

October 25, 2007

Creating a Thesis Using Microsoft Word

ITS Training

ISU Information Technology Services

Last Revised October 25, 2007

Jeff Balvanz (jbalvanz@iastate.edu)

(This column contains images of the slides used in the PowerPoint presentation. More *hopefully* useful information appears in the column to the right.)

This course will cover most of the special commands and techniques you'll need to produce a thesis or dissertation with Microsoft Word. The information on margins, fonts, etc. will be tailored to Iowa State University thesis guidelines. For more information, see the Thesis/Dissertation Website (<http://www.grad-college.iastate.edu/thesis/homepage.html>). Except in those cases where there are differences, I'll use the term "thesis" as a synonym for "dissertation"; I've written a thesis, but unfortunately not a dissertation.

We'll be using Microsoft Word 2003 on Windows for the examples, but most of the tricks should work (with slight modifications) using earlier and/or Macintosh versions of Word as well (we'll let you know when they won't).

This course assumes that you are reasonably comfortable using Word; see the "Introduction to Microsoft Word" class and/or Microsoft's Word 2003 Help and How-to site at <http://office.microsoft.com/en-us/word/FX100649261033.aspx> if you're not there yet.

Creating a Thesis with MS Word

- General Settings (Margins, Fonts, Spacing, Numbering)
- Use of Styles for Section Headings
- Tables of Contents and Figures
- Inserting Figures and Tables
- Master Documents
- Landscape Pages

The Graduate Office is very strict about the form of the thesis. You don't get to choose your margin settings, line spacing, paragraph styles, and lots of other things about your document, so first we'll show you how to set the things the Graduate Office insists that you set. Where you do get to make choices, you must be very consistent through the document, so we'll show you how to use styles to make sure that headings and normal text all get the correct settings without you having to remember them. We'll look at Word's tools for creating tables of contents (which you'll need) and inserting figures and tables. We'll show you how to use the master documents feature to automatically assemble a group of related files (like the chapters of your thesis) into a single document. Finally, the Graduate Office is also very fussy about landscaping graphics and tables that don't fit a normal page, so we'll find out how to do that correctly.

Margins

- MINIMUM margins (larger values are acceptable)
 - Set with File > Page Setup > Margins
 - Top 1.25", Bottom 1", Left 1.25", Right 1"
- Make sure that "Apply to:" is "Whole document"
- Do not use mirror margins; these are not to be duplexed

Modifying a Style

- Select Format > Styles and Formatting
- Right-click on the style to change and select Modify
- Click Format, choose a Format menu, make changes, then click OK.

Modifying a Style, page 2

- Repeat the previous step until all settings are made
- When finished changing, click OK.

Fonts

- Set with Format > Font
- Any book font (Ariel, Berkeley, Bookman, Helvetica, New Century Schoolbook, Palatino, Times Roman or similar) is acceptable (NO Comic Sans MS)
- 10 – 12 point
- Must be uniform within document

Macintosh Word X users: you'll need to select File > Page Setup > Settings: Microsoft Word > Margins... to get to the margins window. Macintosh Word 2004 users can select Format > Document > Margins instead.

If you're working with a large document, and formatting absolutely has to be consistent within it, then you *must* learn how to use styles. With styles you do not have to remember all of the formatting changes you have made, you simply select the appropriate style and go on. There are styles for headings, styles for captions, styles for table of contents entries, and others, and if necessary you can create your own. Most of the text in your thesis will be in the Normal style, and many of the other styles are based on the Normal style, so it makes sense to change the Normal style first.

Styles are one of the things that seriously changed in Word 2003. In Macintosh Word and all previous versions of Word for Windows, you modify a style like this:

1. Select Format > Style...
2. Highlight the style to be changed in the Styles list.
3. Click Modify.
4. Click Format, choose a Format menu, make changes, then click OK.

From there on out, it looks the same as Word 2003.

If you're just editing text you can also select the font and point size from the Formatting toolbar. Mac Word users can select the font from the Font menu. The best place to set the font, however, is in the appropriate style setting, and that has to be done in the Format Font dialog.

A good approach to making sure that your document will look uniform on as many machines as possible is to stick to two fonts that come with Word: Arial and Times New Roman. That gives you a sans serif font, and a serif font that should be available everywhere Microsoft Word is found.

More on Fonts

- Heading, captions, etc. may be in a different font than body text, but you must be consistent throughout the document
- Headings may be up to 14 pts
- No text may be smaller than 10 pts except in tables

Text Spacing

- 1.5- or double-space
- 0.25" or 0.5" indent for first line of each paragraph
- No additional space between paragraphs
- Block quotes may be single-spaced

Text Spacing, page 2

- Select **Format > Paragraph > Indents and Spacing**
- Set **Line Spacing** to 1.5 or Double
- Under **Indentation**, set **Special** to **First Line** with a 0.25 or 0.5 inch indent
- Click **OK**

Page Numbering

- Uniform font and position at top of page
- Either centered or in upper right-hand corner
- At least 0.75" from page edge

Once again, the consistency requirements make this a job for styles. That, and the fact that many things like footnotes and figure captions that have the font and point size set automatically can be controlled by changing the appropriate style. Rather than highlighting the caption text and resetting the attributes, change the associated style instead. We'll work with heading styles a bit later on.

You can use line-and-a-half or double-spacing, but (again) you must be consistent within the thesis. The first line must be indented either 0.25 or 0.5 inches, and there shouldn't be additional space between paragraphs. I think that 0.25" indents look better with 1.5 spacing and 0.5" indents with double-spacing, but that's just my opinion. You may single-space blocked quotations; those are also usually indented 0.5 inches from each margin. Tables may also be single-spaced within table cells.

It is no longer necessary to use exact line spacing, which will make your life a lot easier than it was for those who came before you.

You will need to do some experimentation with the exact value of spacing. Start with either 1.5 times or twice the point size, print out the first page, and see if you're happy with the appearance. Double spacing will produce more pages than 1.5 spaces for the same number of words.

Which value of indentation should you use? Well, the larger indentation looks better with double-spaced text, and the smaller with 1.5 spaced text. The density of the font also has an effect; I think that the smaller indentation works better with more compressed fonts, but that's just my opinion.

You must use the same font and point size for the page numbers as you did for the normal body text. Most theses use centered page numbers but right-justified page numbers are also acceptable. You must not place dashes or other punctuation marks around the page number or use the word "Page" before the page number.

Most theses use centered page numbers (see the examples on the thesis website).

Page Numbering, page 2

- Select **Insert > Page Numbers**
 - Position: Top of Page (Header)
 - Alignment: Center or Right
 - Turn off “Show number on first page” if including title page in thesis document
 - Click OK.
- Select **File > Page Setup > Layout**
 - Header: 0.75”
 - Click OK.

Preliminary Numbering

- Preliminary pages numbered “i, ii, iii”
 - Put cursor at end of preliminary pages
 - Select **Insert > Break > Section Break Next Page**
 - With cursor before break, select **Insert > Page Numbers > Format**
 - Choose the “i, ii, iii...” numbering format
 - Click OK, then Close (NOT OK)
 - Click Close (NOT OK)

Subsequent Numbering

- Remaining pages number with Arabic numerals starting with “1”
 - Move cursor after break and select **Insert > Page Numbers**
 - Turn on “Show number on first page”
 - Click **Format**
 - Choose the “1, 2, 3...” numbering format
 - Choose “Start at” and enter the number 1
 - Click OK twice.

Paragraph Styles and Headings

- Thesis permits Main headings, Major Divisions, Major Subdivisions and Minor Subdivisions
 - There are also paragraph headings, but those are just boldfaced text at the beginning of the paragraph.
- Use Heading 1 – Heading 4 styles to establish divisions

If you are creating your thesis as one large document (the usual procedure), you must turn on “Different first page” so that the page number does not appear on the title page.

Mac Word users: use this for the second step instead.

1. Select **Format > Document > Margins**
2. Header: 0.75”
3. Click OK.

Earlier versions of Word won’t do this quite so easily; you will have to experiment with editing the page header, and inserting a page number at the center tab.

Preliminary pages include the signature page, the table of contents, the list of figures and the list of tables (where appropriate). These pages are numbered with lower-case Roman numerals. The “real” pages, beginning with the first chapter, are numbered with Arabic numerals. The title page is page “i” but should not contain a number.

In order to create this difference we insert a section break between the preliminary pages and the main pages, then set the numbering format differently on both sides of the break.

Now we move the cursor after the section break and set formatting for the main section. The main section of the thesis must not only use Arabic numerals, but it must begin numbering with 1. Since we want a page number on the first page of the section, we must turn “Show number on first page” back on here. Then in the Format menu, we not only switch back to “1, 2, 3...” format but we *must* tell Word to restart the numbering at one using the “Start at” box. *Be absolutely sure that the number one appears on the first page!*

A heading must appear at the beginning of sections and subsections of the thesis to divide it from the rest of the document. There are five permitted heading types: Main headings, Major Divisions, Major Subdivisions, Minor Subdivisions and paragraph headings. You could make all of the settings for each heading manually, but you’d need to remember all the attributes for each heading type. It’s much simpler to use styles. The Main heading must appear at the top of a new page. Word already has the Heading 1, Heading 2, Heading 3 and Heading 4 styles that you can use to establish divisions. You could create your own styles, but the heading styles have some advantages:

- The Heading styles are automatically applied to text in the Outline view, and are automatically adjusted when you promote or demote a heading. When you outline your thesis in Outline view all of the heading styles will already be set correctly.
- The Heading styles are used to identify divisions for the Table of Contents generator, letting you build the table of contents with all of the headings and page numbers automatically.
- When you create an Acrobat Reader file with Word 2003 and Adobe Acrobat, it automatically creates bookmarks and hyperlinks in the PDF file for all the headings.

Styles and Headings, page 2

- Using “Heading n” styles will also facilitate automatically creating the table of contents
- The heading must have at least one line of text following it, or it should move to the next page. Word can do this automatically...

You must have at least one line of text on a page following a heading. Add the “Keep with next” attribute to the heading styles, so that there will be at least one line of text after the header. You’ll still have to check the pagination as you write your thesis and add page breaks as necessary.

Styles and Headings, page 3

- Select `Format > Styles and Formatting`
- Right-click on a heading style and select `Modify`
- Click `Format > Paragraph`
- Under `Line and Page Breaks`, turn on “Widow/Orphan Control” and “Keep with next”
- Click `OK` twice.

For the main heading style (Heading 1) you should also turn on “Page break before”, since the chapters of the thesis are to start on a new page. Just one more thing you won’t have to remember to do.

Remember that Macintosh Word and earlier versions of Word for Windows select the style to modify in this way:

1. Select `Format > Style...`
2. Highlight the style to be changed in the Styles list.
3. Click `Modify`.

Main Headings

- Type main (first level) headings in uppercase
- You can’t use the All Caps style in Table of Contents styles because lowercase Roman numerals in the page numbers will be printed uppercase

Each main heading in your thesis must begin with a centered heading like “CHAPTER 1. OVERVIEW”. You must type those headings in capital letters. Don’t try to use the All Caps style on Heading 1, because when you transfer the headings to the Table of Contents, the page numbers will also be in uppercase letters. That’s not permissible. So leave “All Caps” off the Heading 1 style, even though it’s tempting.

The one exception to this rule is the Table of Contents. Do not use the Heading 1 style on the Table of Contents; instead, format the header for the Table of Contents exactly the same as Heading 1. The line for the Table of Contents may not appear in the Table of Contents, and using Heading 1 will place it there automatically..

Saving a Template

- Create a template so you don't have to save all those changes again.
- Select **File > Save As...**
- Under **Save as Type** choose "Document Template (.dot)"
- Give the template a meaningful name
- It will appear in your list whenever you select **File > New**.

Do you have to do all those settings every time you create a new file? No, not if you save it as a template. The template names appear in the list every time you create a new document, and if you choose one of them (instead of "Blank Document") all those special settings will be loaded automatically.

Select **File > Save As**, and under "Save as Type" choose **Document Template (.dot)**. Give the template a meaningful name (like "Thesis Format", in this case) and when you start creating new sections (or working on your dissertation) it'll be all ready for you.

Table of Contents

- Triggers on the **Heading 1, Heading 2, etc. styles**
- Insert with **Insert > Reference > Index and Tables > Table of Contents**
- To fit the thesis criteria you must modify the **TOCn styles**
 - TOC1 (Main headings) – put 12 pts before, space exactly 12 pts
 - TOC2-4 – space exactly 12 pts

If we have started all the divisions and subdivisions of the thesis with headers in the appropriate style, we can generate the table of contents, complete with correct page numbers, with a single easy operation. There are a couple of caveats, however:

- Put "TABLE OF CONTENTS" at the top of this page, formatted with the same settings as **Heading 1**, but don't use the **Heading 1** style because an entry for the table of contents itself shouldn't appear in the table of contents.
- You will have to make changes to the **TOC1, TOC2, TOC3 and TOC4** styles; the line spacing is set to match **Normal**, which is double-spaced, but single spacing is required in the table of Contents. Change those styles as shown on the slide.
- If you make changes to the document after the table of contents has been generated, you have to regenerate the table of contents. The page numbers don't automatically change themselves when you add or remove pages.

Every time you regenerate the table of contents, you should remember to set the **Tab leader** for the page number tab to "None". If you don't, Word will put periods between the headers and the associated page numbers. For some reason, Word doesn't pay any attention to the current settings and assume that you'd probably want to do it the same way again.

Table of Contents, page 2

- Set the **Tab leader** for the page number tab to **None** (You must do this each time you regenerate the table of contents!)

Figures

- Insert figures from other applications using Copy&Paste or the Insert Picture command
- Pictures are normally inserted in-line. Select `Format > Paragraph`; set the line spacing to `Single` and turn any special indentation off; then insert the picture
- Photographs can be scanned and inserted normally

The coming of electronic submission means all photographs, charts, etc. in the thesis must be in electronic form. If you have a choice, encapsulated Postscript files (EPS files) are the best graphics to use instead of bitmaps, GIFs or JPEG images. Use high resolution images (600 dpi or higher) for best reproduction. As a general rule, the drawing tools built in to Word are not good choices for creating graphics for your thesis; for best results, use an external tool that can create EPS files and import those files into Word.

If the image is narrow enough to appear between the margins on a portrait page, insert it this way. Create a blank paragraph where you want the graphic to appear, put the cursor in that paragraph and select `Format > Paragraph`. Set the line spacing for that paragraph only to “Single”. Remove any special indentation and click OK. Now go ahead and use Copy and Paste or `Insert > Picture` to insert the graphic.

If the graphic is too small to fill the margins the Graduate Office will accept text wrapped around the graphic, but it should probably be avoided if the graphic covers more than half the margin width. The resulting text column will be too narrow.

Rather than simply typing a caption below the image you’ve inserted, use the Caption feature instead. Then the figure will be identified so you can create a List of Figures automatically in the same way as the Table of Contents.

Unfortunately, captions aren’t actually attached to the image, but are an inserted field code (like the mailmerge codes or the magic page number references). You’ll need to inspect them before generating a List of Figures so that you’re sure that one hasn’t slipped off and moved to a different page from the image, especially if you have to move the image within the document.

To make changes to the captions' appearance, modify the "Caption" style.

The List of Figures should appear on a page after the Table of Contents (back in the preliminary pages). Create a new page by inserting a page break, put the LIST OF FIGURES header at the top (in Heading 1 style), then use `Insert > Reference > Index and Tables > Table of Figures` to insert the table.

Figure Captions

- For the “Figure n” label, use the Caption feature
 - Right-click on image
 - Select `Insert -> Reference -> Caption`
 - Type Caption name after “Figure n.”
 - Select “Below selected item” for Position
 - Captions are independent of the images; if you move the picture, the caption will have to be moved manually.

List of Figures

- Use the Caption feature to create List of Figures entries in your thesis
- Position the cursor where you want the list, then select `Insert > Reference > Index and Tables > Table of Figures`
- Set Caption Label to “Figure”
- Set Tab leader to “None”
- Click “OK”

Tables

- Tables are inserted normally
- Use `Format > Borders and Shading` to eliminate the table gridlines and produce heading and footing lines like those shown in the samples on the thesis website
- Add table captions with `Insert -> Reference -> Caption`

The good news: you can use a different font from the body text for the text in the table and the fonts in different tables may be different from each other. That means if the table is a little wide and you need to drop down from 12 point to 10 point and/or switch to a more compressed font to get the table to fit, you can. However, the text should remain “viewable”, which means never smaller than 8 points, and 10 points is a more practical minimum. If you can’t get the table to fit in the margins at 10 points, you’ll probably have to make it a landscaped table (which we’ll do later).

Table gridlines are discouraged in a thesis. Traditionally, tables have a double line above the header row, a single line underneath the header row, and another double line at the bottom of the table. If the table extends over multiple pages, there is no line at the bottom of a table section to be continued. To do this:

- Highlight the entire table, choose `Format > Borders and Shading` and remove the gridlines by clicking on the lines in the Preview area. Click OK.
- Highlight the top row of the table, choose `Format > Borders and Shading` and put a double gridline above and a single line below the row. Click OK.
- Highlight the bottom row of the table, choose `Format > Borders and Shading` and put a double gridline below the row. Click OK.

If a table breaks across a page you need to include a “continued” title at the top of the subsequent pages. What this probably means is that as you get close to final copy, you’ll need to break the table into parts. The easy way to do this is to insert a row where you want the break, then use `Table > Convert > Table to Text` to change it into a blank line with tabs in it. You can then insert a page break there and put the “continued” heading on the second piece of the table.

Table Captions

- Highlight the table or use `Table -> Select Table`
- Select `Insert -> Reference -> Caption`
- Select “Table” for Label
- Select “Above selected item” for Position
- Type Caption name after “Table n.”
- Captions are independent of the tables; if you move the table, the caption will have to be moved separately.

Creating a caption for a table works just like creating a figure caption. You need to make sure that the “Label” entry is “Table” as sometimes Word gets confused.

Again, if you want to change the text size it’s best to modify the “Caption” style.

List of Tables

- Works just like the List of Figures
- Position cursor on List of Tables page
- Select `Insert -> Reference -> Index and Tables`
- Select `Table of Figures`
- Set Caption label to “Table”
- Set tab leader to “None”
- Click “OK”

The List of Tables appears on the page after the List of Figures. Be sure that you put “List of Tables” at the top of the page using the Heading 1 style so that it shows up in the Table of Contents.

Aligning numerical data in tables, number of decimal points varies

- Highlight cells in column
- Select a decimal aligning tab at left end of ruler
- Click in ruler where you want the decimal point to appear
- Drag the tab marker until numbers line up correctly

Word's tables give you good tools for aligning any kind of information. Just highlight the column and use the same alignment buttons you use for centering or right-aligning ordinary paragraphs. When the column contains numbers with varying numbers of decimal places, you'll have to set a decimal-aligning tab. Yes, I know you can't use tabs in a table – it moves the cursor from cell to cell. But each cell is assumed to begin with a tab, and if you set a decimal-aligning tab in that cell, the entries with periods will line up with that tab stop. If it doesn't work, check the alignment button in the Formatting toolbar; the column has to be left-justified for the decimal-aligning tab to work correctly.

Master Documents

- Used to organize multiple files into a single document.
- Separate parts of the thesis can be stored in separate files, then organized into a single document through the use of a master document.

So far we have assumed that we're building the entire thesis as one big document. That has its advantages; there's only one file to ship around (albeit a big one) and it's easy to get styles to stick. However, the big disadvantage of using a single file is the eggs-in-one-basket problem. What happens when that one big Word document gets corrupted and you can't open it any more?

Well, you are backing up regularly, aren't you? We'll talk a bit about rolling backups later, which will save most of your work in the event of a disk failure, but there's another way to minimize your risk; keep the parts of your document separate. Put each chapter in a separate file, and use a master document to organize everything into one big printout. That way, if for some reason you lose chapter 5 irrevocably, you still have the other portions of the document intact. (Of course, this doesn't help you if you lose the entire disk...)

Creating a Master Document

- This assumes that the parts of your thesis already exist as separate Word documents
- Create a new document from your thesis template, or create the document and make the appropriate margin, font, etc. settings
- Select View > Outline
- If the outlining toolbar is not visible, select View > Toolbars > Outlining

Let's assume that you've already put together each of the chapters of your thesis, along with the abstract, the appendices, and any other little piece you're adding. You've been very careful to use the styles from the thesis template, you've been passing them around to your committee and anyone else that wanted to review them, and now it's time to put it all together. Either

- Create a new document from your thesis template, or
- Start a new document and set the margins, styles, etc. before going on.

Next, switch to outline view with View > Outline. You should see the Outlining toolbar appear; if not, choose View > Toolbars > Outlining until it is.

Create Master Doc, page 2

- Position cursor after the first heading
- Click **Insert Subdocument** on the Outlining toolbar and select the first file to be inserted
- Repeat the previous step until all of the documents have been inserted
- To modify part of the thesis, edit that document
- To print, open and print the master document

To insert documents, just click the **Insert Subdocument** button on the Outlining toolbar and select the name of the file to insert. Start at the beginning and work your way down. When all the documents have been inserted, go to the beginning of the document and build the Table of Contents and List of Figures; Word will use the page number consistently from the grouped document, not the pages of the individual files. When you're ready to print, just print the master document and all the rest will come along for the ride.

Creating a PDF File

- Choose File -> Print
- Select "Adobe PDF"
- Enter a name and location for the PDF file
- Click OK.

To create a PDF file with all your hyperlinks preserved in the final copy, you will need to have Adobe Acrobat (the real one, not just the reader) installed. There are free PDF creators, but most of them lose the hyperlinks. Acrobat is available in most of the campus computer labs, so if worst comes to worst you can create the PDF file there.

There are a couple of different ways to use Word to create a PDF file. If you want to avoid fuzzy fonts, you will use the technique described at left.

If you don't have access to Acrobat or the ISU Computer Labs, there are other alternatives. See <http://dissertations.umi.com/iastate/pdffaq.html> for more information.

Backup

- If you are writing your thesis in Microsoft Word, you are responsible for backing up your files.
- If something happens to the disk your only copy is on, you will lose your work.
- Neither hard disks, Zip disks, floppy disks, CD-Rs, CD-RWs, DVDs or USB drives are indestructible.
- **You have been warned.**

In addition to teaching short courses, I do data recovery and disk repair for the ISU Solution Center. I have seen far too many people come into my office with their only copy of their thesis – three years of their life's work – on a broken disk, which has happened because "I thought Zip disks weren't supposed to have problems." No. There are no disks that don't have problems. Not hard disks, not Zip disks, not floppies, not CD-Rs and CD-RWs, not DVDs, not USB flash drives. Disks break. There is only one way to be sure that you will not lose all your work: make sure that you have more than one copy.

Rolling Backups

- With a rolling backup, you have lost at most one day's work.
- Each day, copy your working files to a different disk (i.e., Monday, Tuesday, Wednesday, Thursday, Friday, etc.)
- The working files can stay on your hard disk; the disk copies are just insurance.

Suppose you make a backup copy of your files today, and tomorrow something goes wrong with your working copy. You go back to the backup...and it's broken too! What do you do? If you've been keeping a rolling backup, you go back to the copy from the day before, and at most you've lost 48 hours of work. A rolling backup uses not one backup copy, but several.

Choose a backup interval. A week is pretty reasonable. So you'll have one backup disk for Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday (assuming you work all those days – you can probably skip the one or two that you don't normally write on). Each day, you take the disk for the day in question and copy your working directory to it. The next day, you use the next disk, and so on until you get back to the first day. Now you have not one but seven backup copies, each a little newer than the last.

Unless you work in the labs, of course, you'll keep your working copy in a directory on your hard disk; floppies and CD-RWs are sort of slow for easy working on large files.

Off-site Backup

- What if a fire, flood, tornado or other disaster trashes your entire apartment/house/office? All the backup copies in your office won't help then...
- Periodically, make a copy of your work and put it somewhere safe:
 - Safe deposit box
 - Copy at home or in the office
 - Mail to a relative

All the backup copies in the world won't help you if the disks they're on are all burned up in the same fire. Once in a while, at least every couple of weeks, make a copy of your work and put it in a safe place other than where the rolling backup is. If you have a safe deposit box, put it there (disks will last 5-10 years there, CDs should last longer). If you're working at home, stash a copy in your office, or vice versa. Or dump the files to a CD and mail it to a relative. Remember, an offsite backup isn't something you're planning to use; it's just there for insurance, in case something happens to all the other copies.

AFS Space

- Each ISU NetID gets 1 GB of free online storage (more can be rented for \$0.056/GB/day); also used by WebMail
- The space can be accessed through:
 - § An AFS client (OpenAFS)
 - § A Kerberized ftp client like FileZilla or Fetch (ftp to isua.iastate.edu with your NetID and password)
 - § The ASW File Manager (<http://asw.iastate.edu>)
- This space is backed up daily; restores from yesterday are free, from the previous week is \$10

No one seems to know that their 1 GB of online file storage exists. Yes, it also gets used for your WebMail mailboxes (and, for those few people that still use Vincent workstations, for their MH mail and UNIX files) but most of us still have plenty of space left and it's cheap to rent more.

Cheap? At six cents per gigabyte per day? With the cost of disks nowadays, you call this cheap? Yes – because this is space available from almost anywhere, from many different kinds of machine, and the space is backed up daily.

If by some accident you delete your entire thesis directory in AFS space you simply log in to <http://asw.iastate.edu>, choose "Manage FileSystems" then "Mount/Unmount AFS Backup Volume", and yesterday's files come back. No remembering to copy disks, no figuring out which backup disk to insert, just magically *back*. And we keep additional backups around for several days; an operator will mount those for you for a ten dollar charge (see the Solution Center for details).

If your computer dies, you can still get at your AFS space from another one. On top of that, unless your office is in the Durham Center, your AFS space is automatically an off-site backup. We even maintain our own off-site backup of your files, just in case the Durham Center blows up. All those factors should be enough to make it well worth the modest rental charges.

If you're using any of the operating systems that can interact with AFS directly, you can use that AFS space as if it were a drive. You can edit documents with Word in that space directly, without copying files around. If you're using Windows 2000, XP or Vista, use Micronet Scout to install an AFS client on your machine. (See <http://www.it.iastate.edu/downloads> for more details.) Mac OS X users can also install OpenAFS; see <http://www.tech.ait.iastate.edu/macosx/how-to.shtml> for instructions. Finally, if you're using Red Hat Enterprise Linux, you can install Iowa State Linux and mount your AFS directory at login or manually. (See <http://linux.iastate.edu> for more info on installing Iowa State Linux.)

If you don't fall into any of those categories, you can use a Kerberized ftp client like Filezilla (Windows) or Fetch (Mac) to transfer files to and from your AFS space for backup purposes. Just

connect to isua.iastate.edu with your ISU NetID and password.

Yet another alternative is to use the file manager in ASW. Connect to <http://asw.iastate.edu>, log in with your NetID and password, and choose "Manage Files". The Upload File and Download File buttons can be used to transfer files (one at a time, unfortunately) to and from your AFS space.

Landscape Pages

- For tables and figures too wide to appear correctly in portrait
- Complicated by the fact that the margins and page numbers must appear identical to normal, portrait pages (which Word doesn't do well on landscaped pages)

Remember that no font in your thesis should be smaller than 10 points in size, and sooner or later you'll come up with a table too wide to fit in the margins. And those big images won't fit either, without being reduced to the point of unrecognizability. The solution is to turn the table or graphic on edge using a landscape page. Unfortunately, the Graduate College insists (quite correctly) that pages with landscape content still have to have the same margins and page numbering as the rest of the document – which is tricky with Microsoft Word. We can take a couple of approaches to the problem:

- Rotate only the figure or table, leaving the “real” text on the page in portrait mode.
- Make a landscape section in a portrait document, and do special stuff to get the page numbers in the right position.

Word's graphic tools make it fairly simple to rotate graphics, so that's the logical way to deal with charts and scanned images. If you want to insert a chart, build the chart in Excel and paste it into your thesis as a Picture or Enhanced Metafile.

While positioning graphics, especially on landscaped pages, it will help to be able to see the margins. Select **Tools > Options > View** and turn on “Text Boundaries”. Now you'll be able to see the margins as a box in the middle of the page. Make sure when you are finished that the graphic and caption all fit within this box

It can also be easier to juggle graphics when you zoom in on the whole page with **View > Zoom > Whole Page**. You can set it back to “Page Width” when you're finished so you can read the text again.

Pasting the graphic in with **Edit > Paste Special** allows you to specify that the graphic is a picture (even if it's text from Word). You can also insert pictures with the **Insert > Picture** menu.

You'll need to set the text wrapping on the graphic to Square for Word to be able to rotate it (otherwise, it thinks the graphic is an oversized character and won't touch it). Select **Format > Picture > Layout** and set the wrapping to Square.

Now, with the graphic in the middle of the page, select **Draw > Rotate or Flip > Rotate Left 90°**. More than likely, the graphic will be the wrong size. That's OK; we'll fix that next.

Landscape Figures

- For ease of positioning, select **Tools > Options > View** and turn Text Boundaries on
- Select **View > Zoom > Whole Page**
- Use **Insert > Break > Page Break** to create a blank page.
- Use **Edit > Paste Special** to insert the figure as a Picture or “Picture (Enhanced Metafile)”

Landscape Figures, page 2

- Highlight the picture, select **Format > Picture > Layout** and set the wrapping to Square
- Click, hold and drag the picture to the middle of the page
- In the Drawing toolbar, select **Draw > Rotate or Flip > Rotate Left 90°**
- Drag the picture to the lower left-hand corner of the page

Landscape Figures, page 3

- Drag the corners of the picture until it is an appropriate size (the corners preserve the aspect ratio, especially important with bitmap images)
- Highlight the picture and use `Insert > Reference > Caption` to create a caption
- Use the Rotate Textbox button in the Text Box toolbar to rotate the text

If the graphic was an appropriate size to fit on the landscaped page in the first place, another way to set the size would be:

1. Highlight the picture and select `Format > Picture > Size`.
2. Click Reset.

That will return the graphic to its original size and aspect ratio. You can drag the corners if necessary to fine-tune the sizing.

A more precise way to locate the figure is to select `Format > Picture > Layout`, click “Advanced”, then set:

Horizontal: Left relative to Margin

Vertical: Centered relative to Margin

The caption you create will always show up as a text box, and it will always be oriented in the portrait direction. Before clicking on anything, use the Rotate Textbox button to orient it correctly. Of course, that means the text box will be the wrong shape for the text inside...

...but we’ll fix that by resizing the text box. Also, we also want to turn off the fill and border colors so that the text can float properly above the page.

A more precise way to locate the text box is to select `Format > Text Box > Layout`, click “Advanced”, then set:

Horizontal: Right relative to Margin

Vertical: Centered relative to Margin

Landscape Figures, page 4

- Resize the text box to match the caption and the full-page picture
- Drag the text box right by its edge to move the caption to the right side of the page.
- Select `Format > Text Box > Colors and Lines` and set “Fill Color” to No Fill and “Line Color” to No Line

Tables Using a Landscape Page

- Select `Insert > Break > Section Break Next Page` to start a new section on a new page
- Immediately select `Insert > Break > Section Break Next Page` again to start another section
- With cursor in second new section, select `View > Header and Footer`
- Turn off `Link to Previous` in Header & Footer toolbar

To create a landscaped page in the middle of a portrait document, we need to create two new sections in your document; one for the landscaped section, and one for immediately after it. We do that with the `Insert > Break > Section Break Next Page` commands. Immediately after creating the two new sections, we want to go to the second section and turn off the “Link to Previous” item in the Header and Footer toolbar. Why? If we don’t turn it off before we create the special header for the landscaped section, it will make the header for the second portrait section blank like the landscaped section and we’ll have to set the headers up again. Not good. So, follow the directions for changing “Link to Previous” first and you’ll save some work.

Landscape Page Table, page 2

- In Header & Footer toolbar, click Show Previous button
- Turn off Link to Previous here also
- Edit the header to remove the page number

The “Show Previous” button lets us move to the landscaped section without moving the cursor. It’s not required, just convenient. Now we want to turn off “Link to Previous” here also; if we don’t, removing the page number will remove it in the previous (portrait) section of the document as well. Also not good. Once that’s done we can remove the page number from the header; if we don’t, the page number will print on the left side of the page (as seen in the bound document).

Landscape Page Table, page 3

- Move the cursor into the first new section
- Select Page Setup > Margins; make sure “Apply to” is set to This Section
- Click Landscape, then OK

Here we set the orientation for the section that will contain our big table to Landscape. It’s especially important to make sure “Apply to” is set to “This section”, or you’ll landscape your entire thesis. Not what you had in mind.

Landscape Page Table, page 4

- Select Insert > Page Numbers and click Format
- Select Continue from previous section
- Click OK, then Close (NOT OK)
- Select Insert > Text Box
- Rotate the text box so it faces top right

For some crazy reason, Microsoft put the page numbering controls in the Insert > Page Numbers command. Even though we’re not going to use Insert > Page Numbers to position the page number, we still have to look at it. Turn “Continue from previous section” on; that will keep the page numbers sequential. Click OK once, but click Close the second time, as we don’t want to insert a page number.

Now insert a text box with Insert > Text Box. Use the “Change Text Direction” button on the Text Box toolbar to rotate the text so it faces the correct direction, then set the font and point size to match the normal text.

Landscape Page Table, page 5

- Set the text box font and size to match your main text
- Select Format > Text Box > Layout and click Advanced
- Set the horizontal position to 9.87” relative to page
- Set the vertical position to Centered relative to page

This is the part that may require some experimentation. Here we position the text box that will contain the page number so that it will be in the same location and orientation as the portrait page numbers, and the exact horizontal position may depend on the font you’re using. The value given here works for Times New Roman 12 point font; your mileage may vary. If it doesn’t show up in the correct place, try some different values and print just this page until the page number lines up with the page numbers on a normal page.

Landscape Page Table, page 6

- Click **Colors and Lines**; set fill to **No Fill**, color to **No Line**
- Click **OK** twice
- Click the **Center** button to center the cursor
- Select **Insert > Field** and choose **Page** from the field names list; click **OK**.
- Move the cursor to the next page

We're getting closer! We next want to make sure that the text box itself is invisible and doesn't overwrite any other text box we might put on the page (like the caption). So we set both the fill and the line color to nothing so they become invisible.

Next we want to center the text in the text box with the **Center** button, then insert a field code for the page number in the text box. That way Word will put the appropriate page number in at print time and we don't have to.

Landscape Page Table, page 7

- Select **Insert > Page Numbers** and click **Format**
- Select **Continue** from previous section
- Click **OK**, then **Close** (NOT **OK**)
- Now go to the landscaped page and build your table

Almost done! Finally, we want to go to the next page, after the landscaped section, and tell Word to continue page numbering from the previous section here as well. Once that's done you can go back to the landscaped page and build the table.

Landscaping just the table (Word XP/2003 only)

- Prepare a blank page in your thesis document using **Insert > Break > Page Break**
- Open a new document
- Select **Page Setup > Margins**, set the margins to the same as your thesis and set the orientation to **Landscape**

If you're using Word 2003 or Word XP you can rotate not only graphics, but tables as well – sort of. What we can do is copy the table from one document and paste it into the thesis as a picture, which Word *can* successfully resize and rotate.

It's easiest, however, if you create that table in a blank document that has the same margins as your thesis, but is set for landscape orientation. You can then put all the information into the table, adjust margins and alignments, and generally get the table ready to move. Why? Because we're going to paste it into the document as a picture, and while it's not impossible to edit the picture, it's difficult. It's best if the table is finished before we drop it in.

Landscaped Table, p. 2

- Build the table on the landscaped page, making sure to use the same font as your thesis text
- Do not include a caption for the table; we'll put that in later
- Highlight the top row of the table; use **Format > Borders and Shading** to add appropriate lines top and bottom (see the *Thesis Manual*)
- Repeat for the bottom row

We'll add the caption at the top of the table when we paste it in, but you should be sure to leave room for the caption at the top of the page so the table will fit on the page when we copy it there.

Use **Format > Borders and Shading** to put lines at the top and bottom of the table. Highlight a row, select **Format > Borders and Shading**, and use the example box to put appropriate lines at the top and bottom of the row. If the table has too many rows to fit on one page, you may have to create another landscaped page to hold it; if so, you'll need to break the table into pieces and put "Continued" captions on the subsequent pages. See the Thesis/Dissertation Website for details.

Landscaped Table, p. 3

- Save the table's document with a descriptive name; you may need it again if you must make changes to the table
- Highlight the entire table and select **Edit > Copy**
- Return to the blank page in your thesis document, position the cursor on that page, and select **Edit > Paste Special > Picture (Enhanced Metafile)**

When you're happy with the lines around the table, save this document under a descriptive name (like "Table 3.doc") so you can find it if you need to make changes to the table later. As I said before, once it's pasted into your thesis it will be hard to modify; you'll want to go back to this document instead.

Now we copy out the entire table (including the caption line) and paste it into the blank portrait page in your thesis document as a Picture (Enhanced Metafile), not as a table. Why? Because we can rotate a picture with **Draw > Rotate or Flip > Rotate Left 90°**.

Landscaped Table, p. 4

- Highlight the picture
- Select **Draw > Rotate or Flip > Rotate Left 90°**
- Select **Format > Picture**
- Click **Layout** and choose **Square**, then click **Advanced**
- Choose **Horizontal Alignment > Right relative to Margin**

. Since the table isn't a table, but a picture, we can do pictureish things with it. We'll set text to flow around it (not that we're going to put any text on the page) and align it right and bottom with respect to the margin. When we look at the page in a landscaped sense, the table will appear to start at the "top left" corner of the page (really the left bottom corner).

Landscaped Table, p. 5

- Choose **Vertical Alignment > Bottom with Respect to Margin**
- Click **OK**
- Click **Size** and click **Reset**, then click **OK**.
- Create a caption normally, but be sure to change the label to **Table** and put the caption above the table (Word thinks this is a figure)

The final step in this process is to resize the picture so that it matches its original size. Under **Format > Picture > Size**, click **Reset** to return the text to its original size.

Now we use the technique we learned earlier to make a caption for the "table". Problem is, Word thinks this is a figure, not a table, so you'll have to change the label in the caption dialog box to "Table" and put the caption above the table.

Landscaped Table, p. 6

- The caption appears in a text box
- Stretch the text box to cover the page
- Rotate the text in the text box to match the table text
- Select **Format -> Text Box**
- Under "Colors and Lines", change the fill to "No Fill" and the line color to "No Line"

Click and drag the bottom center handle of the caption's text box straight down until it reaches the bottom margin. Now click the "Rotate Text" button in the Text Box toolbar (click it in **View > Toolbars** if it doesn't appear) until the text moves to the lower left-hand corner of the page. Finally, turn off the fill color and line color so the text box becomes transparent and you can see the table through it. Click outside the text box and you should see the caption to the left of the table and the table at the right margin of the page. If your table doesn't fill the page, you might want to drag the table to the left so that it appears just under the caption.

Final warning: if one of your reviewers or the printing service you use doesn't have Word 2003 or XP, this table will wind up printed in portrait mode with the text compressed. It will have the correct text height, but that's about it. If one of your reviewers won't read it on paper or PDF and doesn't have a new version of Word, you'd better avoid using this technique and stick to landscaped pages instead.

