

Some Basic LyX Instructions[‡]

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- If you're asking yourself "What is this?", well, it is my own quick LyX instructions. Every time I learn a new trick, I write it down here - before I forget. Some of it I read from the LyX help, some from friends, or from wiki LyX. But the best was the amazing, friendly, "General Users' list: lyx-users".
- I am surprised how popular this document had become, which motivates me to clean it up and make it more reader friendly. Hopefully you can also find this *LyX Tricks* useful.
- **IMPORTANT:** If you are **now** reading the PDF output, you might find it much more useful to download the LyX file from my webpage, because you can then just copy and paste commands into your own document. You won't really understand this instructions by looking at the PDF on its own.
- LyX combines the power and flexibility of TeX/LaTeX with the ease of use of a graphical interface: www.lyx.org.
- I would like to thank the LyX developers.

*I would like to thank the LyX developers for writing this program and for the various users in the lyx forum that answer questions. www.lyx.org

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1 Latex Short Hand Symbols

Some commands that, today, I use intuitively. You can learn commands along the way by looking at the command buffer on the lower-left corner in L^AT_EX.

1. `ctrl-M` —starts math
2. `shift-control - M` —place math in center
3. `contro-alt N` —place math in center with #
4. `\cdot`
5. `\alpha` α
6. `\partial`
7. `\prime` $'$
8. `\not=` \neq
9. `\cong` \cong “equal and similar” or “congruent.”
10. `\approx` \approx
11. `\mathbb{A}` \mathbb{R} etc.

1. Cntl-M Alt-M (shift-9) \square
2. `\frac` $\frac{\square}{\square}$
3. `^` \square^{\square}
4. `\underset` \square_{\square}
5. `\overset` \square^{\square}
6. Cntl-E *emphasis* in most styles will be italic
7. Multi-line formulas are created when you press `\cases` then C-Enter. You can add or delete columns or lines using the special buttons. $\left\{ \begin{array}{cc} \square & \square \\ \square & \square \end{array} \right.$ or easily $\left\{ \begin{array}{c} \square \\ \square \end{array} \right.$
8. Insert . Math . Cases Environment or the command `\cases`.
9. Edit . Math . Toggle Numbering or the shortcut Cntrl M-m n.
10. Multi-line numbering can be done line by line: Using the menu Edit . Math . Toggle Numbering of Line OR the shortcut M-m N will only toggle the numbering of the line where the cursor is.
11. small space `\,` gives a forced skip. You can decide its length by the # of presses, though limited in length.
12. medium space `\;`
13. med-large space `\quad`
14. `\qquad`

15. `\mbox` - but the easiest is Cntrl-M, then Cntrl-M again, type your regular text, space, then you will go back to math mode.
16. `\boxed` $A\alpha + B$ Inside is a math formula `\boxed{A\alpha+B}`
17. `\fbox` regular text Inside a math box, you get regular text
18. `\forall`
19. `\ldots`
20. `\sum_{t=0}^{\infty}` space `^{\infty}` in a line gives $\sum_{t=0}^{\infty}$
21. If you write this in a numbered equation

$$\sum_{t=0}^{\infty} \tag{1}$$
22. `\times`

2 General Things

- Dictionary: Changing Dictionary from English US to English UK, Document>settings>language

2.1 Saving L_AT_EX documents

- When I save a L_AT_EX document, I work within a folder.
- The L_AT_EX file, and all the other files connected to the file, are in the same folder.
- When I send a document to a co-author, I zip the folder up because the L_AT_EX document is linked to the figures and bibtex. The document will crash without all these together.
- For example, when I move from version 1 to version 2, I copy and rename the folder, not only document. Obviously, you could have multiple versions of the L_AT_EX file, within the same folder. Then, all figures and bibtex are still linked to the files. This is also another strategy you could use.
- Word documents do that for us.

2.2 Webpages

1. a good place to learn latex code—
<http://www-h.eng.cam.ac.uk/help/tpl/textprocessing/teTeX/latex/latex2e-html/ltx-3.html>

2.3 Numbering Equations and Figures

1. To number equation, go to: Edit→Math→Number whole or number line
2. To number equation by sections, go to *document preamble* and drop in `\usepackage{amsmath}` and `\numberwithin{equation}{section}`. Go to Document Preamble go to: Document→settings→latex preamble
3. Place in preamble: `\numberwithin{equation}{section}` and for figures `\numberwithin{figure}{section}`. IMPORTANT: need to go to Document > Settings... > Math Options, uncheck "Use AMS math package automatically" and check "Use AMS math package" instead, and it will work. Alternatively, just place in preamble: `\usepackage{amsmath}`
4. To label go to Insert:Label

5. Insert cross reference.
6. QUICK make line numbering *cnrl-alt-n*
7. I want to start with an equation, do the calculation on the right side, and end up with the solution and an equation number at the end.
8. For example, I begin with insert equation with a number by using *cnrl-alt-n* Then I use *cnrl-enter* to create the next equations (like a matrix). to have a number only in the end of the equations, all I do is go to the end of the equations I don't want to be numbered and delete the number.

2.4 Inserting Figures

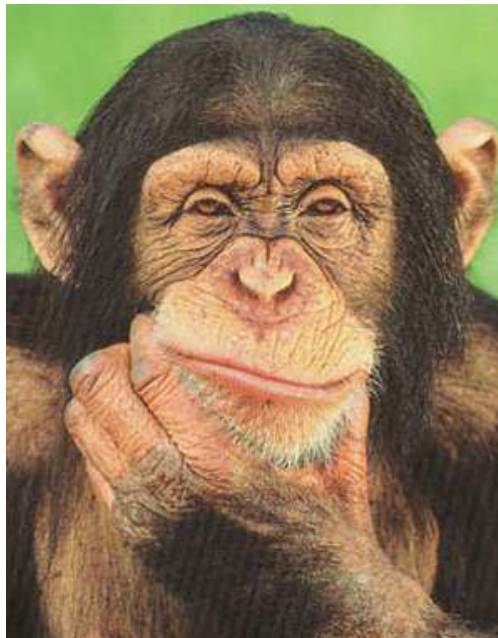
1. Press insert figure float
2. In the little box, place title
3. Above or below, insert > graphics
4. Mark with 'blue' around the graphics, go to edit> paragraph settings>center, or quicker, go directly to "paragraph settings button.

2.4.1 The following is a way to place figures side by side

One Figure

- Insert figure float (either by pressing button or by insert)
- Insert minipage (press 'insert $\backslash\gamma+\backslash\beta$ ox button' or insert>box)
- Insert > Formatting > Horizontal Fill
- Insert graphics
- Right mouse click and obtain extra settings: example, "prefer figure here"

Figure 1: One figure



Two Figures

Figure 2: Float on the left side.

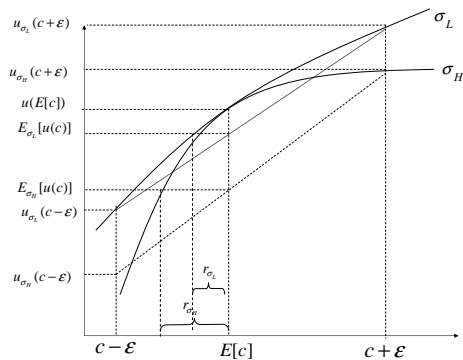
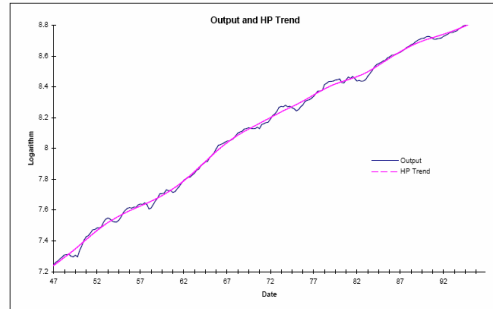


Figure 3: Float on the right side.



Three Figures

Figure 4: Case 1

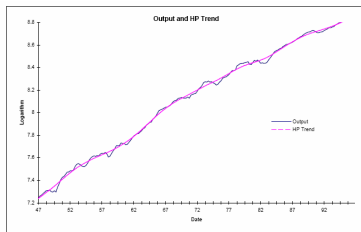


Figure 5: Case 2

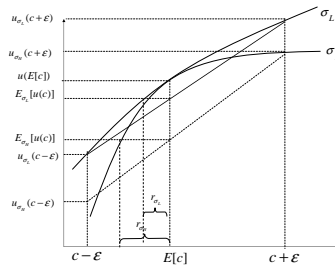
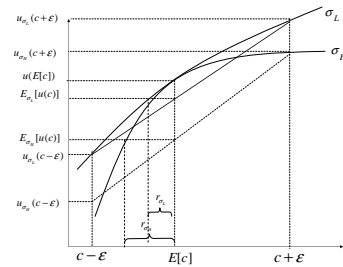


Figure 6: Case 3



set box setting: width according to how many pics in a row. If three, then 33%.
 set graphics setting: width is 100; column width

2.5 Tables

From Excel. Build a second lyx work sheet. Between each column, place & and closing column \

In Lyx doc. Float:table,

\begin{tabular} { add here l or c or r }, each column needs either: l (left) c (center) r (right)

\hline a new horizontal line - will draw a line above and below.

To draw a vertical line, within the tablar place a | .

& is a break in column - jumps to the new column

\end of line, any code after that is on the next line.

If using a %, you must place \% , because latex then thinks it is a comment.

Table 1: test table

Year	Observations
1995	59,994
1996	62,573
1997	67,928
1998	71,835
1999	74,782
2000	74,648
2001	78,194
2002	84,147
2003	87,429
2004	88,453
2005	89,679
2006	92,507
2007	93,130

Table 2: test table

Year	Observations		
Water Quantity	MCM% of total	Expenditure	NIS/MCM
	2005		
Agriculture	543.7 41%	1111.7	2.0
Non-Agriculture	85.1 6%	378.5	4.4
Household	710.4 53%	3448.8	4.9

2.6 Other Tricks

1. Importing from Scientific Work Place(SWP) see: <http://wiki.lyx.org/FAQ/ImportingFromSWP>
2. If you want in “Enumerate” to have the first line with the #, then the next line under, but no #, press control-enter.
“like I did now”.
3. Find and Replace. If you want to replace math, then save lyx backup. Open up the original file in my favourite note pad, and replace.
4. To Start Appendix : Document>Start Appendix Here
5. ERT `[\begin{appendices}]`
ERT `[\end{appendices}]`
6. To prevent Lyx from centering numbered equations: use the fleqn option in the Document Class under Settings. This left-justifies the equations,
7. Forcing a section (and all below it) to start on a different number. Just place in ERT `\setcounter{section}{1}` before the section, and it will start counting from 2.
8. How can I get rid of the headings out of some pages?
You can use the ERT command `\pagestyle{plain}` before the list of figures command.
Then put `\pagestyle{headings}` (or `\pagestyle{fancy}` if you were using fancyhdr) in ERT somewhere in the page where you want to resume headings.

9. To make the text: "Table of Contents" appears in the Center of the screen? (Just the Title) By default it is shown aligned to the Left.

```
\renewcommand\contentsname{\center Table of Contents}
```

2.7 Bibliography/Reference

To start a bibliography, I use a bibtex file which I place in my literature folder. This bibtex file is created with Zotero.

In LyX, I point to this file and cite from it.

Zotero/LyZ update my bibtex file whenever I have new references to add.

2.8 Citing with Zotero/LyZ

1. Zotero is an add-on to Firefox
2. LyZ is a plug-in that connects Zotero and LyX.
3. Instructions see: http://www.klubko.net/?page_id=945&lang=en
4. With Zotero I store my bibliography and update my bibtex file. I can also do mind-mapping with it. Check out VUE.
5. Open LyX, but have no document open.
 - (a) Set LyXServer path (in LyX go to menu, Tools > Preferences... > Inputs > Paths and set LyXServer path to):
 - (b) Windows users can use the default path setting in LyZ, i.e. "\\.\pipe\lyxpipe".
 - (c) Linux and Mac users can use e.g. "~/lyxpipe" and change the LyZ settings accordingly.

2.9 Starting a new Reference in a New Document

1. Go to the place in your document where you want the references to be presented (presumably, the end. You can also have reference at the end of each section). Click Insert/ Lists & TOC/ BibTeX Bibliography. LyX opens a menu-X..
2. In the Menu-X, add > (a new menu-Y comes up) browse > look for the XXX.bib file where your bibliography is stored. Press Add, then OK. Menu-Y closes. You can add multiple libraries...
3. Back in Menu-X, change style to **klunamed**.
4. See various styles in <http://www.mackichan.com/index.html?techtalk/632.htm~mainFrame>

2.10 Citing

1. Click LyX's Layout/Document setting, choose Bibliography. Here you specify the style of citations you want. (I chose **klunamed**)
2. Choose author-year citation format, so click the "Use NatBib" button. And save your settings. Warning: NatBib will not work with all bibliography styles.
3. It works with: apalike, klunamed, apsa etc.
4. Now, suppose you are writing a document and you want to cite something. Click LyX's "Insert/ Citation" button. A menu should open and you should see the list of reference "keys" in the column on the right. LyX should have read your bib file and found all of the items.
5. You could also cite through Zotero/LyZ
6. bst files located in C:\Program Files\MiKTeX 2.7\bibtex\bst

In Zotero, the LyZ button enables me to cite directly from Zotero.

2.11 Acknowledgements

```
\begin{acknowledgement}
\end{acknowledgement}
```

2.12 Header + Footer

Go to Document > page layout
change page style to “fancy”

In the preamble, you need to cancel what you don’t want to be show by overriding it with an empty command.

```
\rhead{} cancels right header
\chead{} cancels right header
\lhead{Erez Yerushalmi} adds My name.
\rhead{Section \thesection} or \thesubsection etc. gives 'Section 2' etc.
```

Discovered a Problem: Header still goes by default small page, even though in the preamble I asked LyX to have the MS-Office defaults. In order to make it work, in Tools > Setting > Page margins, need to put margins in manually.

Here is how you control the font size in the header/footer using fancyhdr.
Note that you can do that for each portion of the header or footer independently.

```
\usepackage{fancyhdr} \pagestyle{fancy}
\lhead{\scriptsize \textsf{Principal Investigator/Program Director (Last, First, Middle)}} %left header
\chead{} %Leave the center of the header empty \rhead{Adrian} %Display this text on the right of the
header
\lfoot{\scriptsize \textsf{PHS 398 (Rev. 05/01)}} %Display this text on the left of the footer
\cfoot{Page \ \thepage} % Print the page number in the center of the footer
\rfoot{\scriptsize \textsf{Continuation Format Page}} %right footer
\renewcommand{\headrulewidth}{0.4pt} %print a rule below the header
\renewcommand{\footrulewidth}{0.4pt} %print a rule above the footer
```

2.13 Subtitle

A brutal solution is to put the subtitle in the title and separate it by hard-enters (**Ctrl-Enter** in LyX) and make it smaller by `_brutal force_`

3 Ready Made Structures: Plug and Play

ρ density
 V volume
 g gravitational acceleration
or

$$\begin{aligned} \text{Condition 1: } & f'(x^*) \geq 0 \\ \text{Condition 2: } & x^* [f'(x^*)] = 0 \\ \text{Condition 3: } & x^* \geq 0 \end{aligned} \tag{2}$$

4 ERT Commands

```
\noindent{}
```

4.1 Start Number of an Enumerated List

This example illustrates how you can change the starting number of an enumerated list. Here's a normal list:

1. The first item
2. The second item

And here is a list where by adding [5] as ERT after the number to make the list start from 5.

- 5 The first item
1. The second item

However, this does not change the subsequent numbers. There is also no '.' after the number, you have to write that manually. In order to change the subsequent numbers, you need to change the value of the variable that keeps track of the numbers by adding `\setcounter{enumi}{5}` as ERT. Here's an example:

5. The first item
6. The second item

5 Making a new Journal Layout (NOT working)

1. Make copy of article.layout renamed as article-aer.layout
2. Changed - `\DeclareLaTeXClass{article}` To `\DeclareLaTeXClass[article, > aer.sty]{article (aer)}` And added - Preamble > `\usepackage{aer}` > EndPreamble > > Better to use "AddToPreamble" here, lest you accidentally over-write something.
3. Saved article-aer.layout in C:\Program Files\LyX16\Resources\layouts > 4. Open lyx, reconfigure, exit lyx

6 Various Preamble Commands

1. Instead of equation #, it has #section.#equation — but remember go to Document > Settings... > Math Options, uncheck "Use AMS math package automatically" and check "Use AMS math package" instead, and it will work.
`\numberwithin{equation}{section}`
2. Instead of just figure #, make #section,#figure —
`\numberwithin{figure}{section} % #section.#equation`
3. ragged right (unjustified) output —
`\usepackage{ragged2e}`
`\RaggedRight`
4. Font 12, article — `\documentclass[12pt,english]{article}`
or just do Document > Settings > Fonts
5. To make the MS-Word type margins5——
`\usepackage{geometry}`
`\geometry{verbose,letterpaper,tmargin=2.54cm,bmargin=2.54cm,lmargin=3.17cm,rmargin=3.17cm}`
6. Or simpler, just go to document > setting > page margins and set top,bottom, inner and outer to 1 inch.

7. to increase the space between a bullet and the text that follows?

```
\addtolength{\leftmargini}{3ex}
\addtolength{\labelsep}{3ex}
change 3ex to whatever amount of space you want).
```

8. In order to use standard article layout, but also have Definition, Proof, Axiom... add to the preamble

```
%Building Descriptions
\@ifundefined{theoremstyle}{\usepackage{amsthm}}{\theoremstyle{plain}}
\newtheorem{thm}{Theorem}[section]
\theoremstyle{definition}
\newtheorem{definition}[thm]{Definition}
\theoremstyle{proof}
\newtheorem{proof}[thm]{Proof}
%end of Building Description
```

9. to change to roman enumeration, add in preamble. NOTE that you still see in lyx editor 1.2.3..., but in pdf output as i. ii. iii.

```
%\renewcommand{\labelenumi}{\roman{enumi}.} %\renewcommand{\labelenumii}{\alph{enumii}}
```

will give you MAIN enumeration as i. and SUB a.

10. however

11. if you want i.) and a.) - the parenthesis), then add

```
\renewcommand{\labelenumi}{\roman{enumi}.)} \renewcommand{\labelenumii}{\alph{enumii}.)}
```

13. Normally we have

```
1. Section 1.1 subsection 1.1.1subsubsection
but you want to get
1) Section 1.1) subsection 1.1.1) subsubsection
```

(a) You need to redefine the macros:

```
\thesection, \thesubsection, and \thesubsubsection, e.g.:
```

```
\newcommand\mysection{\arabic{section}} \renewcommand\thesection{\mysection} \newcommand\
\renewcommand\thesubsubsection{\mysubsubsection}}
```

6.1 changing how Section, Subsections etc. look like

Here, we change the default article large/bold to large/italics.

```
\renewcommand{\section}{\@startsection
{section}%           % the name
{1}%                 % the level
{0mm}%               % the indent
{-\baselineskip}%   % the before skip
{0.5\baselineskip}% % the after skip
{\normalfont\large\itshape}} % the style
```

or here section is bold normal and subsection is italic normal.

```

\renewcommand{\section} {\@startsection
{section}%           % the name
{1}%               % the level
{0mm}%            % the indent
{-\baselineskip}% % the before skip
{0.5\baselineskip}% % the after skip
{\normalfont\bfseries}} % the style

```

```

\renewcommand{\subsection} {\@startsection
{subsection}%           % the name
{1}%               % the level
{0mm}%            % the indent
{-\baselineskip}% % the before skip
{0.5\baselineskip}% % the after skip
{\normalfont\itshape}} % the style

```

7 Presentation (using Beamer)

7.1 General

Super Easy.

Document>document class> scroll down to find 'beamer presentation'
 Use on the left hand side: beginframe, endframe. Part, section, subsection.

In preamble place:

```
\usetheme{Warsaw}
```

I'm using now

```
\usetheme[hideothersubsections]{Hannover}
```

Not necessary - extra

```
%\usecolortheme{seahorse}
```

```
%\usecolortheme{rose}
```

% seems to fix typewriter font in outline header:

```
%\usepackage{ae,aecompl}
```

Lots of presentation styles:

1. \usetheme{Berlin}
2. \usetheme{Warsaw}
3. \usetheme[hoptionsi]{Marburg}
4. \usetheme{boadilla}

See in the website, www.ctan.org, a pdf file of: "The beamer class Manual for version 3.07."

7.2 Page number

various ways

- **plug in preamble.**

```
\setbeamertemplate{footline}[text line]{\insertframenumber}
```

- **If using a theme like Warsaw**

– In beamer slides, this will give you slide/total slide.

- go to left side of the title, go to insert>short title which opens a box opt
- in opt box plug in for example slide *texmode inserframenumber / texmode \inserttotalframenumber*
- or copy paste the following which will not be seen in pdf printout (plug and play) TITLE

7.3 Tex Code for Beamer

7.3.1 Defining a Slide

Here is how to define a slide

```
\begin{frame}
\frametitle{A title}
Some content. bla bla bal
\end{frame}
```

7.3.2 Printing a few slides on one page for handout

In preamble plug in

```
\usepackage{pgfpages}
\pgfpagesuselayout{2 on 1}[a4paper,border shrink=5mm]
```

7.3.3 Deleting/suppressing frames

Sometimes you want to have slides present in the presentation, but not in the handout.

In order to print a handout (suppress some slides) you place the following command in TEX mode.

For suppressing a frame, do the following:

Write in TEX

```
\begin{frame}<handout:0>
\frametitle{A title}
Some content. bla bla bal
\end{frame}
```

THEN

Go to document>setting>in custom write **handout**.

Don't forget to delete it if you want a presentation with all slides included!!

7.3.4 Pause

In TEX, at the end of the bullet, write `\pause`, or in the side drop-down box, use the pause function. But this makes too many marks in L^AT_EX. I like the clean tex `\pause`.

7.4 Handouts in Beamer

7.4.1 To have some slides NOT appear in your handouts, you do the following:

- those slides that I would like NOT to appear in a handout, I use TEX and write

```
\begin{frame}<handout:0>
\frametitle{bla bla bla - here is the title}
```

- then, when I'm ready to see handouts, I go to setting>custom> type-in **handout**

7.4.2 To print 2 or 4 slides in one sheet I add in the preamble:

```
%TO PRINT A FEW SLIDES ON ONE PAGE
\usepackage{pgfpages}
\pgfpagesuselayout{2 on 1}[a4paper,border shrink=5mm]
%\pgfpagesuselayout{4 on 1}[a4paper,border shrink=5mm]
```

- But so far, only 2 slides come out nice. 4 slides is too small. I don't know why.

7.4.3 Not tested: Beamer background image on one slide only

You need

```
ERT
box{\usebackgroundtemplate{\includegraphics[width=\paperwidth]{/home/graham/Dropbox/Lectures/R-Intro/Images/Moon.png}}
Then the begin frame menu item
Frame content
Then end frame menu item
Then an ERT box with }
```

7.5 Adding a box in Beamer

```
\begin{block}{title of box }
```

- some text

8 Hebrewpage

NOT TESTED

- XeTeX instead of L^AT_EX for Hebrew because it allows to use any font installed the system.
- If you type in unicode (utf8) and use a unicode font, this works well.

In your preamble put this:

```
\usepackage{fontspec}
\usepackage{xltextra}
\usepackage{bidi}
\newfontfamily\hebrewfont[Script=Hebrew]{<your font installed on your system>}
\newenvironment{hebrew}{\setRL\hebrewfont}{\setLR}
\newcommand{\he}[1]{\RL{\hebrewfont #1}}
```

To include Hebrew, type:

```
\he{<Hebrew text>}
```

or

```
\begin{hebrew}
<Hebrew text>
\end{hebrew}
```

Biblical Hebrew is SBL Hebrew, but you can choose any font on your system when you compile with XeTeX. Google for how to set up LyX to use XeTeX. It's not that complicated.