برعاية السيد عميد كلية الهندسة الأستاذ الدكتور

عبد المنعم عباس كريم المحترم

يقيم قسم هندسة القدرة والمكائن الكهربائية وشعبة البعثات والعلاقات العامة

محاضرة تعريفية حول برنامج الكتابة LaTeX

Introduction to LaTeX

BY Assit. Lecturer

Qasim Al Azze

Scholar & Relation Ship Office Manger

Engineering College

University of Diyala

LATEX

OVERVIEW

- **Brief history Of LaTeX**
- **What is LaTeX?**
- **How does differ form another editor like Microsoft Ward?**
- **How can be used and Who can use Latex ?**
- **Types of LaTeX and Required package or tools.**
- **Using LaTeX, Example of Writing**
- **Template of some University style**
- **Summery**

Brief History of LaTeX

- TeX, late 1970's [1], It was created by Professor [Donald Knuth](#) of Stanford University, originally for preparation of his book series

- As a typesetting program for text and mathematical formulae.

- LaTeX was developed in the early 1980's by *Leslie Lamport* as a higher level language that uses TeX

- He introduced predefined document styles, automatic cross references, automatic numbering and a variety of other useful features.

- LaTeX is 2e which was first released in 1994, with numerous of packages

What Is Latex

* **LaTeX** is a document preparation system for high-quality typesetting.

* LaTeX is usually not like Word in that you can type and click buttons to get what you want.

* You usually have to "code" a little bit.

* LaTeX uses a plain text markup language which is compiled into a PDF document using optimal typographical rules.

What Is Latex

➤ Use for medium-to-large technical or scientific documents

➤ Can be used for almost any form of publishing [1].

➤ LaTeX encourages authors *not* to worry too much about the appearance of their documents but to concentrate on getting the right content.

➤ creation of templates which do not require advanced knowledge of LaTeX to use

➤ LaTeX user to create beautiful documents and learn LaTeX as they go.

How does Latex differ from another editor like Microsoft Ward?

Microsoft Office Ward :

❑ Easy to Use, Available may be in every PC.

❑ Direct Writing the Idea without need to writing codes.

❑ Creating tables and insert figures or pictures is simple

❑ Maybe Can use with some programs that make it is easy to follow with Citation.

❏ **However MS Word have some drawback:**

➢ NOT free,

➢ Not easy to keep track with the equations, figures …… etc Number as well as the table of contains .

➢ Mostly writer worry about the output what is look like

➢ Difficult to maintain the same manner with inserting Pictures or Figures of writing.

➢ Not easy to use new version.

How does LaTeX differ from another editor like Microsoft Ward?

The main advantage of **LaTeX** over MS Ward

- ❑ Free of Charge
- ❑ Easy to form any type of writing like thesis ….
- ❑ Easy to make Template
- ❑ Can Use Package
- ❑ The programs design to keep track with number of equations, figures, chapters, … etc.
- ❑ Some University and Journal they have there own template of latex

How many type of LaTeX ?

Tow Types :

❖ use it ONLY on your laptop or home computer,

❖ Another total portability.

I really like the totally portable solution for students who switch often between computers, but if you always use your own laptop you are better off with the first solution. Or may be the installation one

LaTex Types

* **Totally portable --- LaTeX online**

❑ online LaTeX editors. A couple of good options are [ShareLaTeX](#) and [Overleaf](#).

❑ Available everywhere including on iOS, no need to install, have your file both on and off campus, no need to sync devices/files)

❑ disadvantages (requires an internet connection, need to upload graphics, usually slower compilation times).

LaTeX Types

LaTeX on your desktop or laptop

* You'll need to install LaTeX and all the associated tools.

* For Windows, MikTeX with TexMaker .

 http://miktex.org/download ,
http://www.xm1math.net/texmaker/

* For the Mac, MacTeX, .

* These programs must be installed, So no need to internet connection.

Using Latex

1. Starting with LaTex
2. Import Pictures and Figures , Label, ref
3. Create Table or Matrix
4. Citation

Windows of Latex, TexMaker

Starting With LaTeX

PREAMBLE, you tell the text editor what kind of document you're making, what packages you're using, Packages allow the use of certain commands or they are used for formatting. For example \usepackage{fullpage} tells the text editor to use the full page when generating the pdf, and \usepackage{graphicx} allows images to be inserted into the document.

```
1    \documentclass[12pt]{article}
2
3    \usepackage{fullpage}
4    \usepackage{graphicx}
5    \usepackage{amsmath}
6
7    \title{2.086 Lab 7}
8    \author{Marcel Thomas}
9
10   \begin{document}
11   \maketitle
12   \begin{enumerate}
13
14   \item[3.]
15
16      \begin{align*}
17      \mathtt{OBJECTIVE \_ NEW \_ VAL} &= 21.0600 \\
18      \mathtt{max(U \_ bestalpha)} &= 60
19      \end{align*}
20
21      The value of $\mathtt{max(U \_ bestalpha)}$ is correct.
22
23      \begin{figure}[h]
24      \centering
25      \includegraphics[scale=0.7]{Umu}
26      \caption{A plot of $\mathtt{U \_ bestalpha}$.}
27      \end{figure}
28
```

Preamble

Document

Interesting Packages

Other interesting packages:

```
# tlmgr install amsmath babel carlisle ec geometry graphics hyperref lm
marvosym oberdiek parskip pdftex-def url
```

amsmath	The essentials for math typesetting.
babel	Internationalization support.
carlisle	Bundle package required for some babel features.
ec	Required for T1 encoding.
geometry	For page layout.
graphics	The essentials to import graphics.
hyperref	PDF bookmarks, PDF followable links, link style, TOC links, etc.
lm	One of the best Computer Modern style font available for several font encodings (such as T1).
marvosym	Several symbols, such as the official euro.
oberdiek	Bundle package required for some geometry features.
parskip	Let you configure paragraph breaks and indents properly.
pdftex-def	Required for some graphics features.
url	Required for some hyperref features.

If you installed a package you do not need anymore, use

```
# tlmgr remove <package>
```

2.2.5. Hyphenation

Starting Example

```
\documentclass{article}
\usepackage{microtype}
\title{ Electrical Power and Machines Engineering Department }
\author{Qaaim Al Azze}
\date{September 1994}
 \begin{document}
\maketitle
 University of Diyala is the first high education institute in
Diyala province. UOD has been graduated a lot of student in
many field of  humanity and sciences; History education, Arabic
Language, Chemistry Science, Mathematic Science, Engineering
......etc.
\end{document}
```

Electrical Power and Machines Engineering Department

Qaaim Al Azze

September 1994

University of Diyala is the first high education institute in Diyala province. UOD has been graduated a lot of student in many field of humanity and sciences; History education, Arabic Language, Chemistry Science, Mathematic Science, Engineering ..etc.

Example

```latex
\documentclass[a4paper,12pt]{article}

\usepackage[english]{babel}
\usepackage{graphicx}

\begin{document}

\begin{figure}[!ht]
  \caption{A picture of a gull.}
  \centering
    \includegraphics[width=0.5\textwidth]{gull}
\end{figure}

\begin{figure}[!ht]
  \centering
    \reflectbox{%
      \includegraphics[width=0.5\textwidth]{gull}}
  \caption{A picture of the same gull
          looking the other way!}
\end{figure}

\begin{table}[!ht]
  \begin{center}
    \begin{tabular}{| l c r |}
    \hline
    1 & 2 & 3 \\
    4 & 5 & 6 \\
    7 & 8 & 9 \\
    \hline
    \end{tabular}
  \end{center}
  \caption{A simple table}
\end{table}

Notice how the tables and figures
```

Figure 1: A picture of a gull.

Figure 2: A picture of the same gull looking the other way!

Table 1: A simple table

Notice how the tables and figures have independent counters.

Latex_caption_example.png

Introduction to LaTeX
Go to Example 1 and 2

BY Assit. Lecturer

Qasim Al Azze

Scholar & Relation Ship Office Manger

Engineering College

University of Diyala

Citation with LaTeX

Citation type
- Vancouver system [1]
- Harvard system (Al Azze, Q. 2014)

* **Embedded Type**
* Using Command \cite {keyword}

* **begin**{thebibliography}{9}
* **bibitem**{lamport94} Leslie Lamport, **emph**{**LaTeX**: a document preparation system}, Addison Wesley, Massachusetts, 2nd edition, 1994.
* **end**{thebibliography}
* Within the text

Citation with LaTeX

BibTex Type

* Using commend \cite {keyword} within the text.
* \bibliographystyle{unsrt}
* \bibliography{sample}

* @article{greenwade93,
* author = "George D. Greenwade",
* title = "The {C}omprehensive {T}ex {A}rchive {N}etwork ({CTAN})",
* year = "1993", journal = "TUGBoat",
* volume = "14",
* number = "3",
* pages = "342--351" }

21

Citation Example

* Reference style
1. Alpha
2. Plain
3. abbrv

Instead of WYSIWYG editors, typesetting systems like TEX [AHB03] or LATEX [Lam94] can be used.

References

[AHB03] Paul W. Abrahams, Kathryn A. Hargreaves, and Karl Berry. *TEXfor the Impatient.* 2003.

[Lam94] Leslie Lamport. *LATEX: A Document Preparation System.* Addison-Wesley, second Edition, 1994.

Instead of WYSIWYG editors, typesetting systems like TEX [1] or LATEX [2] can be used.

References

[1] Paul W. Abrahams, Kathryn A. Hargreaves, and Karl Berry. *TEXfor the Impatient.* 2003.

[2] Leslie Lamport. *LATEX: A Document Preparation System.* Addison-Wesley, second Edition, 1994.

Instead of WYSIWYG editors, typesetting systems like TEX [1] or LATEX [2] can be used.

References

[1] P. W. Abrahams, K. A. Hargreaves, and K. Berry. *TEXfor the Impatient.* 2003.

[2] L. Lamport. *LATEX: A Document Preparation System.* Addison-Wesley, second Edition, 1994.

Citation Methods

Introduction to LaTeX

Go to Example 2

BY Assit. Lecturer

Qasim Al Azze

Scholar & Relation Ship Office Manger

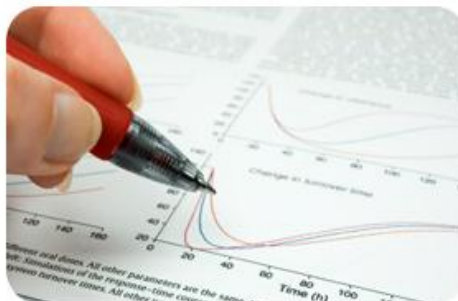Engineering College

University of Diyala

LATEX

Templetes

{ The best source of free quality LaTeX templates }

Academic Journals

Articles

Assignments

Books

Calendars

Conference Posters

🎓 **UNIVERSITY OF CAMBRIDGE**

Department of Engineering
IT Services

🏠 University of Cambridge > Department of Engineering > Computing Help > LaTeX

PhD/MPhil Thesis - a LaTeX Template

A new version of this, by Krishna Kumar, is available. Features include -

- Conforms to the Student Registry PhD dissertation guidelines and CUED PhD guidelines
- Supports LaTeX, XeLaTeX and LuaLaTeX
- Adaptive Title Page: Title page adapts to title length
- Title page with both College and University crests.
- Print / On-line version: Different layout and hyper-referencing styles
- Pre-defined and custom fonts (Times / Fourier / Latin Modern) with math support
- Supports system fonts (XeLaTeX)
- Pre-defined and custom bibliography style support (authoryear / numbered / custom)
- Custom page styles: 3 Different Header / Footer styles
- Pre-defined and custom margin size
- A separate abstract with thesis title and author name, along with the titlepage can be generated by passing the argument abstract to the document class.
- Option to generate only specific chapters and references without the frontmatter and title page. Useful for review and corrections.
- Draft mode: Draft water mark, timestamp, version numbering and line numbering

Downloading

- *LaTeX Template* - https://github.com/kks32/phd-thesis-template/releases/latest
- *LyX Template* - https://github.com/kks32/PhDThesisLyX/releases

Older versions are still available, but no longer supported.

26

web.mit.edu/thesis/tex/

About the LaTeX thesis templates

The thesis templates have been created to make it easy to prepare your thesis using LaTeX while adhering to the MIT Thesis Specifications. We make every effort to keep these up to date, but you should always consult the MIT Libraries Thesis Specifications before submitting your thesis. If you notice something in the Thesis Specifications that does not match the templates, please let us know by e-mailing us at thesis AT mit DOT edu.

The thesis templates are highly customizable, and there are many options and macros available for your use. Most of these are documented in the comments in each file, especially main.tex. You are encouraged to read through the comments.

Downloading

You may download the thesis templates here: templates.zip.

SHARELATEX

Plans & Pricing   Help ▾   Register   Log In

Templates › Thesis › Harvard PhD

This is the title of the thesis

A DISSERTATION PRESENTED
BY
AUTHOR'S NAME

About

Harvard University PhD thesis template. Clean and elegant, based on Arno Pro font. Distributed under MIT License. Written by Jordan Suchow and Andrew Leifer.

Source: https://github.com/suchow/LaTeX-template-for-Harvard-dissertation

Open in ShareLaTeX   ☁

f 🐦 G+ +

Comment

1 Comment   ShareLaTeX Templates   🔴 Login ▾

EN   🔋 🔊 📶   8:19 PM 1/26/2016

(54 unread) - qasm_eng - | Inbox (3) - alazzeqasim@g | LaTeX at SIUE | CTAN: Package arabtex | LaTeX Templates » Theses

https://www.ctan.org/pkg/arabtex

☆ Settings ☢ Help
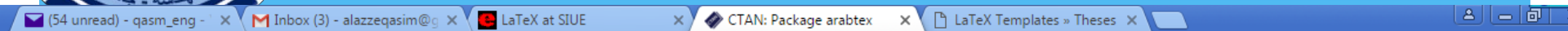
CTAN
Comprehensive TeX Archive Network

🏛 Cover ▼ | ⬆ Upload ▼ | 📖 Browse ▼ | | 🔍 Search ▼

Location: CTAN Packages arabtex

arabtex – Macros and fonts for typesetting Arabic

ArabTeX is a package extending the capabilities of TeX/LaTeX to generate Arabic and Hebrew text. Input may be in ASCII transliteration or other encodings (including UTF-8); output may be Arabic, Hebrew, or any of several languages that use the Arabic script.
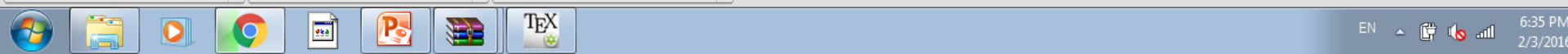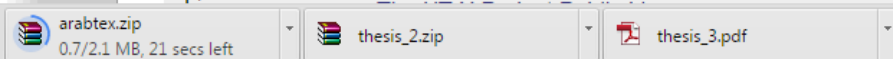
ArabTeX consists of a TeX macro package and Arabic and Hebrew fonts (provided both in METAFONT format and Adobe Type 1). The Arabic font is presently only available in the Naskhi style. ArabTeX will run with Plain TeX and also with LaTeX.

Sources	/language/arabic/arabtex
Documentation	Readme
	Outline of the project
	Package documentation (draft)
Home page	http://baobab.informatik.uni-stuttgart.de/ifi/bs/research/arab_e.html
Version	3.17

Suggestions

Maybe you are interested in the following packages as well.

- arabi: (LA)TeX support for Arabic and Farsi, compliant with Babel
- redis: A Hebrew font
- arabi-add: Using hyperref and bookmark packages with arabic and farsi languages
- makor2: Typeset pointed Hebrew using Omega

more...

arabtex.zip
0.7/2.1 MB, 21 secs left | thesis_2.zip | thesis_3.pdf

⬇ Show all downloads...

EN 6:35 PM 2/3/201

Introduction to LaTeX
Go to Example 3

BY Assit. Lecturer

Qasim Al Azze

Scholar & Relation Ship Office Manger
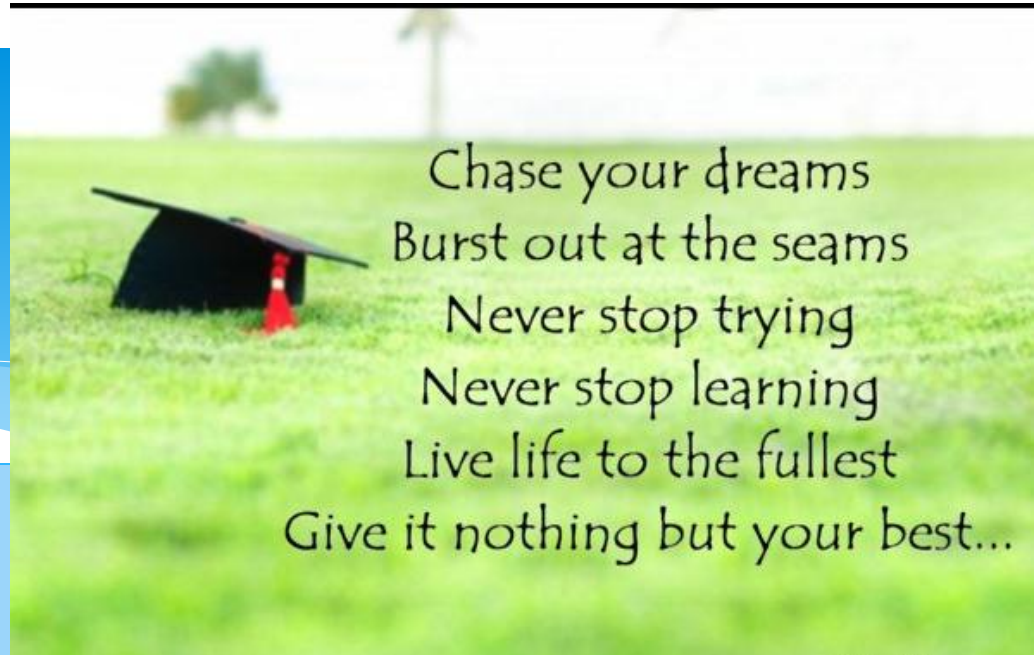
Engineering College

University of Diyala

Summery

* Introducing LaTeX

* Free To Downloads

* How to Use it, Starting , Example 1,2, and 3

* Difficult at first use, but Very Useful for writing any type of Document , How ever we have to sharpen our skill

* The beauty of LaTeX are All its tables and Citation are clickable, Combined another PDF

* Finally with Template is easer to use .

References

* http://www.latextemplates.com/what-is-latex
* http://www.siue.edu/~aweyhau/teaching/latex.html
* https://en.wikibooks.org/wiki/LaTeX/Floats,_Figures_and_Captions
* http://miktex.org/download   for download MIKTEX
* http://download.cnet.com/Texmaker/3000-2051_4-75415863.html   for download TeXMaker
* https://en.wikibooks.org/wiki/LaTeX/Sample_LaTeX_documents
* https://en.wikipedia.org/wiki/Citation for Citation System
* https://www.sharelatex.com/learn/Bibliography_management_with_bibtex
* http://web.mit.edu/mact/www/Blog/LaTeX/LaTeXIndex.html

Chase your dreams
Burst out at the seams
Never stop trying
Never stop learning
Live life to the fullest
Give it nothing but your best...

Thank You For Listening

ANY QUESTION ?