

***Latex Short Course***  
***Latex(2)***  
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Launch the program:

All Programs ⇒ MikTex 2.9 ⇒ Texworks

Enlarge the Font-size of your Texworks page:

Go to the top menu and choose Format⇒Font, then choose a large size (say 28pt)

### References

%%simple.tex - A simple article to illustrate document structure. ملحوظة لا تظهر في الشكل النهائي

\documentclass{article} نوع الوثيقة

\usepackage{times} نوع الحروف في الوثيقة

\begin{document} بدء جسد الوثيقة

\title{My Second article} كتابة عنوان البحث

\author{My name may be written here\\} اسم المؤلف وعنوانه في عدة اسطر

Address line 1,\\"

Address line 2,\\"

\texttt{myemail@kau.edu.sa} } كتابة الايميل باحرف آلة الطابعة وتختلف عن احرف الوثيقة

%\texttt{} formats the text to a typewriter style font ملحوظة لا تظهر بالشكل النهائي

\date{\today} %\today is replaced with the current date اختيار تاريخ اليوم

\maketitle لابد من ذكر الامر هذا لدى استخدامك لامر كتابة العنوان اعلاه

\begin{abstract} بداية ملخص البحث

In this article, we learn how to design a simple (basic) document in Tex within \cite{lamp94}. More

notes is provided by Dr Andrew Robert \cite{andy1} لاحظي اننا بدأنا كتابة ارقام المراجع

\end{abstract} نهاية ملخص البحث

```
%Create the environment for the bibliography. Since there is only one  
%reference, set the label width to be one character (I shall follow  
%convention as use the number '99'. This is because it helps to remind  
%that it is the maximum number of refs that is now permitted by that  
%width).
```

```
\begin{thebibliography}{99} بداية قسم المراجع
```

```
%The \bibitem is to start a new reference. Ensure that the cite_key is  
%unique. You don't need to put each element on a new line, but I did  
%simply for readability.
```

```
\bibitem{lamport94} Leslie Lamport, {\it{LaTeX: A Document Preparation System}}. Addison Wesley,  
Massachusetts, 2nd Edition,1994.
```

```
\bibitem{andy1} http://www.Andy-robert.net/writing/latex.
```

```
\end{thebibliography}
```

```
\end{document} نهاية جسد الوثيقة
```

## Itemization (un-numbered)

```
\begin{itemize} كتابة بنود غير مرقمة مستوى اول
```

```
\item first item.
```

```
\item Second item
```

```
\begin{itemize} كتابة بنود غير مرقمة مستوى ثاني
```

```
\item first item within the main second item
```

```
\item second item within the main second item
```

```
\end{itemize} نهاية بنود المستوى الثاني
```

```
\end{itemize} نهاية بنود المستوى الاول
```

## Itemization (numbered)

```
\begin{enumerate} كتابة بنود مرقمة مستوى اول
```

```
\item first one
```

```
\item second one
```

```
\end{enumerate} نهاية بنود المستوى الاول المرقمة
```

## Tables

```
\begin{center} بداية التصيف للجدول
\begin{tabular}{|l|c|r|} بداية الجدول من 3 اعمدة
\hline تسطير خط افقي
Student's name & Number & Grade \\ \hline
Hanen & -1 & 1 \\
Wafa & -1 & 1 \\
Jihan & -1 & 1 \\
Wafa & -1 & 1 \\
\hline
\end{tabular} نهاية الجدول
\end{center} نهاية التصيف
```

Note: You may refer to

<http://texblog.net/latex-beginners-guide/examples/chapter-5/>

## Equation's numbering and re-numbering (Customizing equation's number)

Type the following

```
\begin{equation} بداية معادلة بترقيم وتعيين اسمها كمرجع
\hat{H}(t) = \lambda, \bar{x}(t) + \Lambda, \bar{y}(t) - \Omega
\label{hamilton1}
\end{equation}
```

Compile your TeX file

Numbering the equations as (2.1, 2.2,...)

Type the following

```
\setcounter{equation}{0}
```

followed by

```
\renewcommand{\theequation}{2.\arabic{equation}}
\begin{eqnarray}
F(t) &= & g(\pi) \\
G(t) &=& f(\pi) \left[ H \right] \nonumber \\
&& \left. \frac{1}{d} \right]
\end{eqnarray}
```

and then

```
\setcounter{equation}{2}
```

Compile your TeX file

Numbering the equations as (2a, 2b,...)

Type the following

```
\setcounter{equation}{0}
\renewcommand{\theequation}{\alph{equation}}
\begin{eqnarray}
h &=& h \label{eq3a} \\
F &=& F \label{eq3b}
\end{eqnarray}
\setcounter{equation}{3}
We will be also to refer to eq(\ref{eq3a}).
```

Now compile your work

Note: we always need to use \setcounter to the numbering-sequence

Let us create a figure in a PDF format: in this case you need a program (Paint in accessories, photoshop,...) and a PDF creator (either by saving the plot in a PDF file, or use File-Print-PDF complete or PDF995 printer driver or any other).

Save the figure under fig1.pdf

## Inserting Graph/Figure

After \documentclass and before \begin{document}, type the following

```
\usepackage{graphicx}
\usepackage{float}
\floatstyle{boxed}
\restylefloat{figure}
\usepackage[english]{babel}
```

Then insert your plot

```
\begin{figure}[h!]
\caption{Testing the first figure.}
\centering
\includegraphics[width=0.5\textwidth]{fig1}
\label{fig1}
\end{figure}
```

بداية الصورة و يكون موقع الصورة ( هنا ) [h!] اضافة التعليق على الصورة  
تنصيف الصورة ادخال الصورة ويكون عرضها نصف عرض النص  
اعطاء الصورة اسم كي نستطيع العودة للرقم فيما بعد  
نهاية الصورة  
We now can related the figure(\ref{fig1}) to our text.

Compile your TeX twice or three times

Now, we will insert three figures (a), (b) and (c) in a horizontal-way

```
\begin{figure}[h!]
\centering
\subfloat{(a)} {\includegraphics[width=0.25\textwidth]{fig1}}
\subfloat{(b)} {\includegraphics[width=0.25\textwidth]{fig1}}
\subfloat{(c)} {\includegraphics[width=0.25\textwidth]{fig1}}
\caption{Three pictures arranged horizontally}
\label{f2}
\end{figure}
```

In figure(\ref{f2}), the three cases of subfigures are shown, (\ref{f2}a,b,c)

Compile your TeX twice or three times

Or we can do it vertically:

```
\begin{figure}[htp]
\begin{center}
\subfigure{(a)} {\label{fig:edge-a}\includegraphics[scale=0.2]{fig1}}\\
\subfigure{(b)} {\label{fig:edge-b}\includegraphics[scale=0.2]{fig1}}
\end{center}
\caption{Two figures arranged vertically}
\label{f3}
\end{figure}
```

Note:

- (1) Use \listoftables and \listoffigures
- (2) For more explanation on figures and tables see  
<http://www.math.uiuc.edu/~hildebr/tex/tips-figures.html>

## Minipages, tables and footnotes

```
\documentclass[11pt,a4paper,english]{article}
\usepackage[T1]{fontenc}
\usepackage[latin1]{inputenc}
\usepackage{babel}
\usepackage[includehaedfoot,margin=2cm]{geometry}
\usepackage[font=small,labelfont=bf,tableposition=top]{caption}
\usepackage{lmodern}
\parindent0em
```

```
\begin{document}
\begin{center}
```

```
\captionof{table}{Relative potentials of specific Ag/AgCl reference electrodes used in this
author's laboratory vs. prepared Ag/AgCl wire standard electrode.}
\label{Table:Ag_Cl_Potentiometry}
```

```
\begin{tabular}{|c|c|} \hline
Electrode & Potential vs. Standard Ag/AgCl \\
& V \\ \hline
Ag/AgCl Wire & 0.000 \\
Metrohm Double Junction \footnotemark[1] & -0.002 \\
Metrohm (Glass frit # 1) \footnotemark[2] & +0.008 \\
Metrohm (Glass frit # 2) & +0.030 \\
Radiometer (Ref 201, Red Rod) # 1 & -0.010 \\
Radiometer (Ref 201, Red Rod) # 2 & -0.010 \\ \hline
\end{tabular}
```

```
\footnotetext[1]{Metrohm electrode: 6.0726.100}
\footnotetext[2]{Metrohm electrode: Inner; 6.0724.140 + Electrolyte vessel; 6.1225.010}
```

```
\end{center}
\end{document}
```