GPDI 542 Exercises

- Introduction to LaTeX: a document preparation system

Exercise #1 (PPT slide #22)

- Try removing a command and recompile to see what happens. For example, try to remove \maketitle
- 2. Write a couple of paragraphs of text and compile

Exercise #2 (PPT slide #23)

1. Add one of more sections to your text by looking at how the Introduction section was added.

You can organize your document with

```
\section{}
\subsection{}
\subsubsection{}
\paragraph{}
\subparagraph{}
```

Exercise #3 (PPT slide #24)

Try out some of these commands, and see what they do:

- \LaTeX
- \ldots and compare to ...

Exercise #4 (PPT slide #28)

- I. Try out a simple fraction.
- 2. Try out a simple equation using a square root
- Enter the following equation in between \$ and in between \begin{equation} and \end{equation} and compare how it looks.

```
\int_0^{\int_0^{\sin y} e^{-x^2} dx=\frac{\sqrt{\pi^2}}{2}}
```

Exercise #5 (PPT slide #31)

Go to tablesgenerator.com

- 1. At the top right click on "Show an example table"
- 2. Then in the middle right click on "Copy to clipboard"
- 3. Paste the example table into your file in Overleaf and recompile.

Exercise #6 (PPT slide #33)

- 1. Go to https://github.com/j-date/GPDI542 and download the pdf picture called space_rocket.pdf
- 2. Add the image to your document by using the upload button (upper left above your figures folder).
- To include a figure use command: \includegraphics{space_rocket.pdf}
- 4. You can also include the image in a figure frame by creating a figure environment:

```
\begin{figure}
```

```
\includegraphics{space_rocket.pdf}
\end{figure}
```

Exercise #7 (PPT slide #34)

Play with the size, caption and centering of the figure

I. Specify the location of a figure:

```
\begin{figure}[h]
\begin{figure}[H] needs \usepackage{float}
```

2. The size can be modified:

\includegraphics[width=150pt]{space_rocket.pdf}

3. For relative sizes use: \textwidth and \paperwidth

\includegraphics[width=0.5\paperwidth]{space_rocket.pdf}

4. You can also add a caption to your figure

\caption{Caption}

5. You can also center the figure:

\centering

Exercise #8 (PPT slide #36)

Reference a figure:

```
\begin{figure}
  \includegraphics{space_rocket.pdf}
  \caption{Figure of a rocket} \label{fig:rocket}
\end{figure}
```

And later on,

As we can see in Figure \ref{fig:rocket}, one of the illustrations is a rocket.

Exercise #9 (PPT slide #41)

- 1. Go to www.sciencedirect.com and search for an article.
- Get the bibliography reference by clicking Export and choosing bibtex option (see figure below).
- 3. Copy and paste the entry in your bibliography file
- 4. Cite this file in your text.





Abstract

This review is provided a detailed overview of the synthesis, properties and applications of nanoparticles (NPs) exist in different forms. NPs are tiny materials having size ranges from 1 to 100 nm. They can be classified into different classes based on their properties, shapes or sizes. The different groups include fullerenes metal NPs, ceramic NPs, and polymeric NPs. NPs possess unique physical and chemical properties due to their high surface area and nanoscale size. Their optical properties are reported to be dependent on the size, which imparts different colors due to absorption in the visible region. Their reactivity, toughness and other properties are also dependent on their unique size, shape and structure. Due to these characteristics, they are suitable candidates for various commercial and

Exercise #10 (PPT slide #41)

1. Download Elsevier sample manuscript from here.

Usage: The Elsevier document class elsarticle.cls should be loaded with the command:

\documentclass[<options>]{elsarticle}

- 2. Upload .zip file to new project.
- Change the document class <options>
 - Try \documentclass[3p]{elsarticle}
 - b. Then try \documentclass[3p, twocolumn]{elsarticle}
- 4. Change the font to Times

\documentclass[3p, twocolumn,times]{elsarticle}

- 5. Add \biboptions{longnamefirst, angle, semicolon}
 - a. After \bibliographystyle{elsarticle-num}
 - b. See how the references in the text have changed