# General Relativity

## Class 0

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# Contents

# HELLO LATEX

Use the uncompiled version of this document in itself as a LaTeX style guide for the class you'll be responsible for.

## 1 Class notes style package

The package for the class notes will be NotesTex. Please read this document to understand how to use the package. If you already installed LaTeX it most likely already has NotesTex. Try putting \usepackage{NotesTex} in your preamble. Otherwise you can install it through you regular LaTeX package manager or follow the instructions on the *git repository*. [1] [2]

## 2 Other useful packages

- \usepackage{tensor} Putting upper and lower indices in the right order has proven hard for me. If you agree, use this package. Here's a nice example of it's usage:

$$\partial_\lambda \mathcal{M}^{\mu\nu\lambda} = \delta^\mu{}_\lambda T^{\nu\lambda} - \delta^\nu{}_\lambda T^{\mu\lambda}$$
$$= T^{\nu\mu} - T^{\mu\nu} = 0$$

- \usepackage{hyperref} Use this at the very end of your preambles. It will make a clickable link to all your references :).

- \usepackage{amsmath,amsthm,amssymb} The AMSmaths packages. Add math symbols and align environment (best way to write equations).

- \usepackage{graphicx} You need this to include figures. [3]

## 3 Best practices

- Label your equations, figures, tables and sections in a meaningful fashion. Like for instance, (3.1), the Einstein Field Equation:

$$G_{\mu\nu} = 8\pi T_{\mu\nu} \tag{3.1}$$

- Use indentation in your document to make it readable.

- Have one phrase per line. [4]

[1] *If you are totally new to LaTeX this looks like a nice guide.*

[2] *If you are totally new to git, I'm sorry, you will need it. I'll talk briefly about what will be required in this document.*

[3] *This is kinda like a "if you are using LaTeX you should use this package", this not meant to be a comprehensive list.*

[4] *LaTeX don't care. LaTeX only care about \\*

# HELLO GIT

There are plenty good videos and tutorials online on how to use git. Please feel free to look around, ask your peers and me or Aaron for help if you get stuck.

The class will be kept in a public Github repository. You can clone it, branch it, edit the part you are responsible for and then request for a merge to the main repository. You will be mostly evaluated on this regard. You will also be evaluated on relevant comments on the rest of the class material. For some of you, that will be the meat of you evaluation. [5] If you spot something wrong in the equations, figures or text, raise an issue or push an edit with the appropriate comment. If you think a section is unclear or it could use any addition feel free as well to raise the issue.

[5] *There are more students enlisted than classes in the semester.*