1. Scientific writing - Form

1.1. Exercise: editing and page layout

1.1.1. Objectives

- Turn plain text into formatted and structured text
- Understand how tags/styles work in editing software/markup language

1.1.2. Instructions

- Open the plain text file from Moodle with Notepad++, WordPad or equivalent text editor
- Read the text
- Format the text with your favorite editor:
  - Markdown : use collaborative HedgeDoc server of INSA
  - Microsoft Word / Libre Office Writer
  - LaTeX : use Overleaf template "*Écrire du texte*" available on Moodle
- Rebuild the paragraphs and apply relevant style to titles

> **Tip**
>
> Help can be found (in French) on the page Mise en page of *Rédaction Scientifique* webdsite (rs-docs).

1.2. Exercise: equations

1.2.1. Objectives

- Write an equation with **code** (keyboard, ~~mouse~~)
- Properly introduce variables with sentences, before or after the equation (using "where" or "with" keywords)

1.2.2. Instructions

- For each example below:
  - Make a list of mistakes
  - Rewrite the equations in your favorite editor
    - Word : use the equation editor (Ctrl + Alt + =) and type **code**
    - Libre Office Writer : download TexMaths extension
    - Markdown : use collaborative HedgeDoc server of INSA
    - LaTeX : use Overleaf template "*Écrire des équations*" available sur Moodle

1.2.2.1. Example 1

de poisson à partir du coefficient directeur de la droite via la relation : $\epsilon_T = -\nu \times \epsilon_L$
Il est également possible de déterminer le module de Young grâce à la formule suivante :

σL = E×ƐL

1.2.2.2. Example 2

La charge maximale applicable est :

$$F_{\max\ elastique\ acier} = Rel_{acier} \times S$$

$$F_{\max\ elastique\ acier} = 200 * 24.33 * 2.96 = \mathit{14403}\ l$$

1.2.3. Help

1.2.3.1. Equation template

Below is a reference example of well-written equations where the variables are correctly defined.

> The heat transfer equation reads:
>
> $$\rho c_p \frac{\partial \theta}{\partial t} = -\mathrm{div}\left(\vec{q}\right) + r \quad , \qquad (1)$$
>
> where ρ is the material's density, c_p the specific heat, θ the temperature, $\vec{q}$ the flux vector, and r the heat source.
>
> When the problem is stationary, equation (1) simplifies to:
>
> $$-\mathrm{div}\left(\vec{q}\right) + r = 0 \quad . \qquad (2)$$

1.2.3.2. Variable names in the examples

Here is the list of variables to help you:

Variable	Name
ϵ_T	transverse strain
ϵ_L	longitudinal strain
ν	Poisson's coefficient
σL	longitudinal stress
E	Young's modulus
$F_{\max\, elastiqueacier}$	Maximum applied load
Rel_{acier}	Steel yield stress
S	Initial cross-sectional area of the sample

1.2.3.3. Writing equations

> **Tip**
>
> Help can be found (in french) on page Écrire des équations of *Rédaction Scientifique* website (rs-docs) or the French LaTeX help FAQ LaTeX GUTenberg.
>
> You will also need to know how to write units and numbers: see page Écrire les nombres et les unités of *Rédaction Scientifique* website (rs-docs).