

### Introduction

The **UVT Conference Poster Theme** is a modern theme based on beamerposter that uses the official **UVT branding**<sup>a</sup>. Some of its elements and styling are inspired by **Gemini** theme<sup>b</sup>.

- It comes with a few nifty features:
- Use of the official color scheme for UVT throughout.
  - Customized block environments.
  - Easy to extend and modify separate parts (header, fonts, etc).

Separate parts are available as e.g. `\usecolortheme{uvtposter}`!

To use it in you documents add something like the following

```
\documentclass[final]{beamer}
% 1. The theme supports different sizes, e.g. a0, a1, ...
% 2. It can also be viewed in "landscape" or "portrait" mode
\usetheme[size=a1,orientation=landscape]{uvtposter}

% 3. You can select other color schemes or box types
\usecolortheme{uvtposter}
```

More information is available in `template.tex`.

<sup>a</sup><https://dci.uvt.ro/identitate-vizuala>  
<sup>b</sup><https://github.com/anishathalye/gemini/>

### Colors and Fonts

This theme uses the *Myriad Pro* font. This is a clean *sans serif* font from Adobe that is recommended by the official UVT branding.

- The theme has three standard colors:
- A nice **light blue** (UVTLightBlue).
  - A bolder **dark blue** (UVTDarkBlue).
  - An attention grabbing **yellow** (UVTYellow)!
  - Variants `color!x` can also be used to darken or lighten them

These can be used for emphasizing **text** or for more obvious **alerts**. Standard **bold** and *italic* emphasis can of course also be used!

### Lists, enumerations, and descriptions

- Lists**
- Itemize lists are nicely customized ...
    - All the way down ...
      - To the third level!

- Enumerate**
- We can also enumerate!
  - Many things!
  - It's great!

**Description**

**UVT** And describe our university in exquisite detail, so that we can capture all its multiline greatness!

### Blocks

We have various standard Beamer blocks styled in a pleasing fashion. You might have noticed their use for each of the "sections" up to now.

#### Block 1

Some block block: `\begin{block}` ... `\end{block}`.

#### Alert 1

Some alert block: `\begin{alertblock}` ... `\end{alertblock}`.

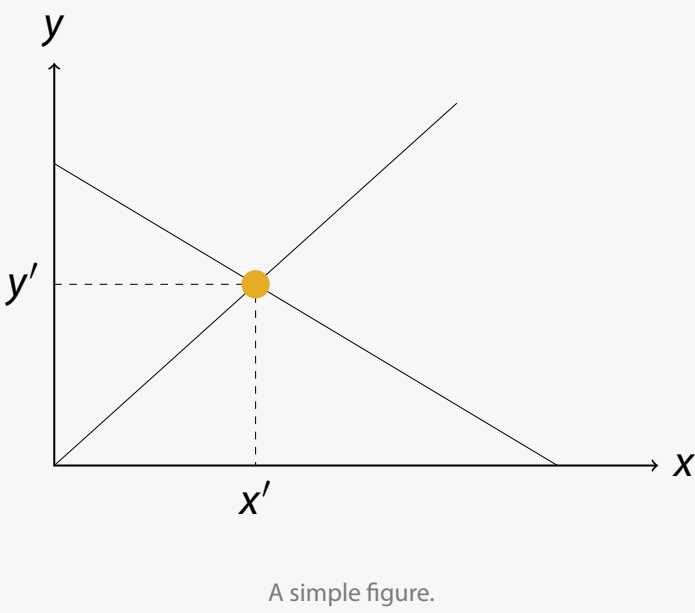
#### Example 1

Some example block: `\begin{exampleblock}` ... `\end{exampleblock}`.

You probably should not nest these as we just did here!

### Figures

You can also add figures to each block.



These should be used quite extensively to better make your point. This is a visual sort of medium after all!

### Tables

Largest cities in the world (source: UN 2018 population estimates from Wikipedia)

City	Population
Tokyo	37,468,000
Delhi	28,514,000
Shanghai	25,582,000
São Paolo	21,650,000

Tables are also a good way to display data. Using the `booktabs` package should make your tables look very nice indeed!

### Example: Infinite Primes

Imagine that there were only a limited number of prime numbers, and we could list them as  $p_1, p_2, \dots, p_n$ . Now, consider the number formed by multiplying all these primes together and then adding one, that is,

$$N = p_1 \times p_2 \times \dots \times p_n + 1.$$

If you try to divide this new number  $N$  by any of the primes on your list, you always get a remainder of 1. This means that none of the primes  $p_1, p_2, \dots, p_n$  can be a divisor of  $N$ . Since every number greater than 1 must have a prime factor,  $N$  must either be a prime itself or be divisible by a prime that was not in our original list.

This simple observation shows that no matter how many primes you start with, you can always construct a number that reveals at least one additional prime, proving that there are infinitely many prime numbers.

### Example: Grönwall Inequality

Suppose you have a nonnegative function  $u(t)$  that satisfies an inequality of the form

$$u(t) \leq a + \int_{t_0}^t b(s) u(s) \, ds,$$

where  $a \geq 0$  is a constant and  $b(t) \geq 0$  is a given function. The idea behind the inequality is that even though  $u(t)$  might depend on its past values through the integral, its growth is controlled by the accumulation of the function  $b(t)$ .

To see how this control works, define an auxiliary function

$$v(t) = a + \int_{t_0}^t b(s) u(s) \, ds.$$

Since  $u(t) \leq v(t)$ , differentiate  $v(t)$  with respect to  $t$  to obtain

$$v'(t) = b(t) u(t) \leq b(t) v(t).$$

Dividing both sides by  $v(t)$  (which is positive) gives

$$\frac{v'(t)}{v(t)} \leq b(t).$$

Integrating this inequality from  $t_0$  to  $t$  and exponentiating yields

$$v(t) \leq v(t_0) \exp\left(\int_{t_0}^t b(s) \, ds\right).$$

Since  $v(t_0) = a$  and  $u(t) \leq v(t)$ , we conclude that

$$u(t) \leq a \exp\left(\int_{t_0}^t b(s) \, ds\right).$$

This simple argument shows that if the function  $u(t)$  satisfies the original integral inequality, then its value at any time  $t$  is bounded above by an exponential function determined by the integral of  $b(t)$ ; this is precisely the statement of the integral Grönwall inequality.

### References

[1] **W. Diffie and M. Hellman.**  
New directions in cryptography.  
*IEEE Transactions on Information Theory*, 22:644–654, 1976.

[2] **D. Jackson.**  
Bernstein's theorem and trigonometric approximation.  
*Transactions of the American Mathematical Society*, 40:225–225, 1936.