

# ∞ Fourier-GUTenberg ∞

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## 1 What is Fourier-GUTenberg?

Fourier-GUTenberg is a  $\text{\LaTeX}$  typesetting system which uses Adobe Utopia as its standard base font. Adobe Utopia has been chosen for several reasons. The main of them is that four typefaces from the Utopia fonts packages have been gracefully donated to the X-consortium by Adobe. These typefaces (Utopia Regular, Utopia Italic, Utopia Bold, Utopia Bold Italic) are free of charges, and freely distributable (but it is *not* free software: see the licence in the read-me file!).

Shortly, here are the main features of Fourier-GUTenberg:

- ☞ Fourier-GUTenberg provides all complementary typefaces needed to allow Utopia based  $\text{\TeX}$  typesetting. The system is absolutely stand-alone: apart from Utopia and fourier, no other typefaces are required.
- ☞ Fourier-GUTenberg provides two greeces, slanted and upright, that may be used in the same document.
- ☞ It makes it possible to typeset “à la french”: upright roman uppercases, and upright greek in math mode.
- ☞ Fourier-GUTenberg does not use OT1 encoding at all. As in standard  $\text{\LaTeX}$  greek uppercases are in the text OT1 font, maths encodings have been redefined.
- ☞ it is *fully* T1 encoded: text symbols like “dottlessj” (j, j) or “eng” (η, η) are provided through a virtual fonts mechanism.
- ☞ Optionnaly, the commercial Adobe expert complement may be fully used by fourier. It includes old-style digits, real (not faked) small caps, semi-bold, extra-black, etc. It may be useful for professional typesetting, but of course, you have to buy the fonts!
- ☞ The `\boldmath` command is not still fully implemented, *but* there are now bold versions of math letters fonts, which can be used with the `\bm` command (package `bm.sty` which *must* be called after `fourier.sty`):  $\alpha x + \beta y$ .

- ☞ Fourier-GUTenberg provides specific symbols, in math mode ( $\mathbb{I}$ ,  $\mathbb{J}$ ,  $\mathbb{K}$ ) and in text mode (€, €,  $\text{\textcircled{e}}$ ).
- ☞ There is a new package provided with Fourier-GUTenberg: `fourier-orns`. This is for those who want only the Fourier-GUTenberg logos & decos, but not the Fourier-GUTenberg fonts. *Please don't call it if you call `fourier`.*

## 2 Installation & setup

The texmf tree provides a standard TDS. You have to install all the `fourier` directories of the `fourier` texmf tree in one of yours texmf trees, according to your TDS specifications.

**WARNING:** Note that in not up to date distributions, the Fourier-GUTenberg map files should be in

```
texmf/dvips/fourier
and not in
texmf/fonts/map/dvips/fourier
```

If you don't still have the four Utopia fonts, you have to install them too in  
`texmf/fonts/type1/adobe/utopia/`

If you have a licence for the commercial Utopia packages, you have to rename the \*.pfb files to suit the declarations in `fourier-utopia-expert.map` (or to modify this file). Mac fonts should be converted to pfb format (with `t1unmac`, for instance).

You have now to setup your installation. Depending, of the choosen texmf tree, it is possible that you have to regenerate first the database (`mktexlsr` command, for instance).

Then, if you have a recent web2c distribution (teTeX, TeXlive, fpTeX...), just run `updmap`.

### UNIX:

```
% updmap --enable Map fourier.map
```

If you want to install the commercial complement too (remember that you will have to buy it...)

```
% updmap --enable Map fourier-utopia-expert.map
```

### Windows:

```
% updmap --enable Map=fourier.map
```

If you want to install the commercial complement too (remember that you will have to buy it...)

```
% updmap --enable Map=fourier-utopia-expert.map
```

Please note that the setting of the dvi previewer is not documented here. On a web2c distribution, updmap should do it.

If you don't have updmap or if the syntax does not match the described command, please tell me.

### 3 Usage

#### 3.1 Calling Fourier-GUTenberg

You call Fourier-GUTenberg with:

```
\usepackage[<options>]{fourier}
```

The options are:

1. `sloped` (default): in maths, lowercase greek is slanted, uppercase greek is upright, roman uppercase are slanted.

$$M \in \Gamma \iff OM = x\rho$$

2. `upright` (à la french): in maths, lowercase and uppercase greeks are upright, and so is roman uppercase.

$$M \in \Gamma \iff OM = x\rho$$

3. `widesspace`: this option offers a larger interword space to those who think that the standard space of Utopia is too narrow...
4. `expert`, `oldstyle`, `fulloldstyle`: in order to use these options you need the commercial complements of Utopia. The `expert` option provides small caps (not faked), semi-bold, extra-black, (see the commands below) and more symbols in the TS1 companion encoding. The `oldstyle` option is the same, with oldstyle digits in text mode, and the `fulloldstyle` option is the same with oldstyle digits in text mode and in math mode.
5. `poorman` (default): if you don't have the commercial complement, you must use this option. The main disadvantage is that small caps will become REDUCED CAPS.

### 3.2 Text commands

First it is not usefull to call the T1 encoding (`\usepackage[T1]{fontenc}`) because `fourier` will do it anyway.

Note that the T1 encoding have been completed:

☞ `\j`  $\mathfrak{j}$ ,  $\mathbf{j}$ ,  $\mathbf{J}$  etc.

☞ `\ng`, `\NG`  $\mathfrak{n}$ ,  $\mathbf{n}$ ,  $\eta$ ,  $\mathbf{\eta}$  etc.

☞ `\textperthousand`, `\textpertenthousand`  $\text{‰}$ ,  $\text{‱}$ ,  $\text{‱}$ ,  $\text{‱}$  etc.

### 3.3 The companion encoding

The TS1 encoding is generally used through the `textcomp` package. This encoding is not fully implemented in Fourier-GUTenberg and the `textcomp` package is called by `fourier`

What is avaiable is roughlyly what is provided in the adobe standard encoding, with some complements:

☞ The euro symbol: `\texteuro` €,  $\text{€}$ ,  $\text{€}$ ,  $\text{€}$ .

### 3.4 Fourier ornaments

Fourier-GUTenberg provides several logos and ornaments:

☞ A variant of the euro symbol: `\eurologo` €,  $\text{€}$ . Please note that the `\textit` command will not change the slant of this symbol, but `\textsl{\eurologo}` € will do it.

☞ Decos and logos: `\noway` ☹, `\danger` ⚠, `\textxswup` ⚡, `\textxsdown` ⚡, `\decoone` ✂, `\decotwo` ☯, `\decothreeleft` ⤵, `\decothreeright` ⤴, `\decofourleft` ⤵, `\decofourright` ⤴, `\floweroneleft` 🌸, `\floweroneright` 🌸, `\lefthand` ☞, `\righthand` ☜, `\bomb` 💣.

☞ Smileys: `\grimace` ☹, `\texttthing` 🙄.

☞ Leaves: `\leafleft` 🌿, `\leafright` 🌿, `\leafNE` 🌿, `\aldineleft` 🌿, `\aldineright` 🌿, `\aldine` 🌿, `\aldinesmall` 🌿.

Finally, some symbols are also provided in math mode, with other names:

☞ `\thething$` 🙄 is a *QEDsymbol* for a false proof. Of course, you don't need it!

☞ `\xswordsup$`, `\xsworddown$` ⚡ may be used as tags for a debated statement, or for anything else. ⚡

### 3.5 Mathematical encodings

#### Compatibility with amsmath

Fourier-GUTenberg is compatible with the `amsmath` package, you no longer need to call `amsmath` *before* `fourier` (thanks to Walter Schmidt). The `amssymb` package will be usefull only if the wanted symbols does not still exists in Fourier-GUTenberg (see the list below). If you finally need `amssymb`, it is best to call it *before* `fourier`.

#### Standard L<sup>A</sup>T<sub>E</sub>X math commands

All standard L<sup>A</sup>T<sub>E</sub>X math commands are supported by Fourier-GUTenberg.

Of course, all these symbols have been redesigned in order to suit Utopia in terms of boldness, contrast and proportions. Greek is particularly concerned:

*a, α, a, α, n, η, n, η, c, ε, ε, c, ε, ε, A, Λ*  
***a, α, a, α, n, η, n, η, c, ε, ε, c, ε, ε, A, Λ***

but also delimiters (and plenty of others glyphs):

$$\begin{array}{cc}
 -\left\{\left\{\left\{\left\{\left\{\left\{\tilde{D}\right\}\right\}\right\}\right\}\right\}\right\}- & -\left(\left(\left(\left(\left(\left(\left(\tilde{D}\right)\right)\right)\right)\right)\right)\right)\right)- \\
 -\left[\left[\left[\left[\left[\left[\left[\tilde{D}\right]\right]\right]\right]\right]\right]\right]- & -\left[\left[\left[\left[\left[\left[\left[\tilde{D}\right]\right]\right]\right]\right]\right]\right]-
 \end{array}$$

#### Mathematical alphabets

Latin alphabets have been stolen to Utopia...

☞ Greek alphabet

Slanted version

*α β γ δ ε ζ η θ ι κ λ μ ν ξ π ρ σ τ υ φ χ ψ ω*

*Γ Δ Θ Λ Ξ Π Σ Υ Φ Ψ Ω*

*Variants: ε ϑ κ ω Ϙ, ρ ζ φ*

Upright version

*α β γ δ ε ζ η θ ι κ λ μ ν ξ π ρ σ τ υ φ χ ψ ω*

$\Gamma \Delta \Theta \Lambda \Xi \Pi \Sigma \Upsilon \Phi \Psi \Omega$

*Variants:*  $\varepsilon \vartheta \kappa \omega \varpi \rho \varsigma \varphi$

The way these symbols may be obtained depends of the required option (sloped ou upright). For instance, with

`\[\alpha,\otheralpha,\Omega,\otherOmega\]`

You get

$\alpha, \alpha, \Omega, \Omega$

with the sloped option and

$\alpha, \alpha, \Omega, \Omega$

with the upright option.

The `\other` prefix allow you to switch from one greek to the other.

☞ Calligraphic alphabet (`\mathcal` command)

$\mathcal{A} \mathcal{B} \mathcal{C} \mathcal{D} \mathcal{E} \mathcal{F} \mathcal{G} \mathcal{H} \mathcal{I} \mathcal{J} \mathcal{K} \mathcal{L} \mathcal{M} \mathcal{N} \mathcal{O} \mathcal{P} \mathcal{Q} \mathcal{R} \mathcal{S} \mathcal{T} \mathcal{U} \mathcal{V} \mathcal{W} \mathcal{X} \mathcal{Y} \mathcal{Z}$

☞ Blackboard-bold alphabet (`\mathbb` command). No need to load `amssymb` to get it!

$\mathbb{A} \mathbb{B} \mathbb{C} \mathbb{D} \mathbb{E} \mathbb{F} \mathbb{G} \mathbb{H} \mathbb{I} \mathbb{J} \mathbb{K} \mathbb{L} \mathbb{M} \mathbb{N} \mathbb{O} \mathbb{P} \mathbb{Q} \mathbb{R} \mathbb{S} \mathbb{T} \mathbb{U} \mathbb{V} \mathbb{W} \mathbb{X} \mathbb{Y} \mathbb{Z} \mathbb{1} \mathbb{k}$

### Provided `amssymb` commands

|  |  |  |
|--|--|--|
| <code>\leqslant</code> $\leqslant$             | <code>\geqslant</code> $\geqslant$                 | <code>\blacktriangleleft</code> $\blacktriangleleft$   |
| <code>\intercal</code> $\intercal$             | <code>\vDash</code> $\vDash$                       | <code>\blacktriangleright</code> $\blacktriangleright$ |
| <code>\nleqslant</code> $\nleqslant$           | <code>\ngeqslant</code> $\ngeqslant$               | <code>\nparallel</code> $\nparallel$                   |
| <code>\complement</code> $\complement$         | <code>\hslash</code> $\hslash$                     | <code>\hbar</code> $\hbar$                             |
| <code>\nexists</code> $\nexists$               | <code>\notowns</code> $\notowns$                   | <code>\varsubsetneq</code> $\varsubsetneq$             |
| <code>\smallsetminus</code> $\smallsetminus$   | <code>\nvDash</code> $\nvDash$                     | <code>\square</code> $\square$                         |
| <code>\leftleftarrows</code> $\leftleftarrows$ | <code>\rightrightarrows</code> $\rightrightarrows$ | <code>\subsetneqq</code> $\subsetneqq$                 |
| <code>\curvearrowleft</code> $\curvearrowleft$ | <code>\curvearrowright</code> $\curvearrowright$   | <code>\blacksquare</code> $\blacksquare$               |

### Fourier-GUTenberg extended commands

The `\widehat` and `\widetilde` commands have been extended (like in `yhmath`).

$\widehat{x} \widehat{xx} \widehat{xxx} \widehat{xxxx} \widehat{xxxxx} \widehat{xxxxxx} \widetilde{x} \widetilde{xx} \widetilde{xxx} \widetilde{xxxx} \widetilde{xxxxx} \widetilde{xxxxxx}$

## Fourier-GUTenberg specific commands

The following commands are provided by Fourier-GUTenberg.

☞ `\varkappa`, `\varvarrho`, `\varvarpi`, `\varpartial`:  $\kappa, \varrho, \varpi, \partial$ .

☞ `\parallelslant` et `\nparallelslant`:  $\parallel, \#$ .

☞ `\iint`, `\iiint`, `\oiint`, `\oiiint`, `\slashint`:  $\iint, \iiint, \oiint, \oiiint, \int$

$$\iint, \iiint, \oiint, \oiiint, \int$$

☞ `\llbracket`, `\rrbracket`, `\VERT`

$$- \llbracket \tilde{D} \rrbracket - \quad - \Vdash \tilde{D} \Vdash -$$

Note that the first version of Fourier-GUTenberg used `\dblbrackleft` and `\dblbrackright` in place of `\llbracket` and `\rrbracket`. The old commands still exist, but are deprecated.

☞ `\wideparen` et `\widering` (like in `ymath`, but please note that it is necessary to call the `amsmath` package in order to get the `\widering` command in Fourier-GUTenberg).

$$\overline{XXXXXXXXX} \quad \overline{(A \cup B) \cap (C \cup D)}$$

☞ Finally `\widearc` and `\wideOarc`

$$\overrightarrow{AMB} \quad \overrightarrow{AMB}$$

## 3.6 Usage of commercial typefaces

The expert, oldstyle or fulloldstyle options, if usable, provides these complementary commands:

☞ `\textsb` `\sbseries` semi-bold;

☞ `\textblack` `\blackseries` extra-black;

☞ `\texttitle` `\titleshape` titling (incomplete T1 encoding);

☞ `\oldstyle` to switch to the oldstyle digits with the expert option;

☞ `\lining` to switch to the lining digits with the oldstyle option.

