Erewhon-Math

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1 What is Erewhon-Math?

Erewhon-Math is an Utopia based OpenType maths font. The maths symbols and Greek letters are borrowed or derived from Michel Bovani's Fourier-GUT*enberg*, Latin letters and digits are borrowed from Michael Shape's Erewhon font.

It requires LuaTeX or XeTeX as engine and the `unicode-math` package[1].

It is meant to be used with Utopia based OpenType text fonts like Erewhon. For Fourier-GUT*enberg* users who want to switch to LuaLaTeX or XeLaTeX, the file `fourier-otf.sty` can be used as a replacement of `fourier.sty`.

Please note that the current version (0.71) is *experimental, do expect metrics and glyphs to change* until version 1.0 is reached. Comments, suggestions and bug reports are welcome!

2 Usage

2.1 Calling `\setmathfont`

A basic call for Erewhon-Math would be:

```
\usepackage{unicode-math}
\setmathfont{Erewhon-Math.otf} % Call by file name or
\setmathfont{Erewhon Math}     % Call by font name
```

this loads Erewhon-Math as maths font[2] with the default options, see subsections 3.1 on page 3, 3.2 on page 4 and 3.3 on page 5 for customisation.

Please note that the three sets of text fonts have to be chosen separately, f.i.:

[1] Please read the documentation `unicode-math.pdf`.

[2] Both calls work equally well with LuaTeX; with XeTeX a call by font name will fail unless the font is declared as a *system font*.

```
\setmainfont{erewhon}[3]                          % rm
\setsansfont{Cabin}[Scale=MatchLowercase]         % sf
\setmonofont{Inconsolatazi4}[Scale=MatchLowercase] % tt
```

otherwise you would get Latin Modern for text fonts.

2.2 Calling `fourier-otf.sty` (recommended)

As an alternative to load Erewhon-Math you can type:

`\usepackage[` *options*[4] `]{fourier-otf}`

it loads `unicode-math` with the default options, sets Erewhon-Math as maths font and Erewhon Text fonts as Roman fonts (families *sf* and *tt* left unchanged) and does a bit more:

1. it loads `realscripts.sty` for better superscripts and footnote calls unless option `fakedscripts` has been activated;

2. it redefines the `\TeX`, `\LaTeX` and `\LaTeXe` logos to fit the Erewhon fonts unless option `no-logos` has been activated;

3. it loads `fourier-orns.sty`, providing many text ornaments;

4. it checks at `\begin{document}` if packages `amssymb` or `latexsym` are loaded and issues warnings in case they are;

5. it provides aliases for glyphs named differently in Unicode, so that `latexsym` or AMS names are also available;

6. it defines specific maths characters like `\Bbbbackslash` (⑊), `\varemptyset` (∅), `\parallelslant` (⫽), `\shortparallelslant` (⫽), etc.;

7. it reduces spacing in maths mode: `\thinmuskip`, `\medmuskip` and `\thickmuskip` are reduced as in `fourier.sty`. The option `loose` disables these settings.

Apart from the `loose` option mentioned above, `fourier-otf.sty` provides two options `no-text` and `Scale=`<*decimal*> meant to be used to load the Erewhon-Math font together with roman text fonts other than Erewhon, while keeping the advantages 1. to 5. pointed in the preceding list, f.i. `\usepackage[no-text,Scale=0.98]{fourier-otf}`

Please note that the fonts loaded by `fourier-otf.sty` are about 2% larger than those loaded by `fourier.sty`: the Erewhon text fonts are based on Utopia reduced à 94%, while the fourier fonts are based on Utopia reduced à 92%. Option `Scale=0.98` can be used to mimic the output produced by the `fourier.sty` package.

Option `no-text` can also be useful if Erewhon is to be loaded with specific options, f.i.

```
\usepackage[no-text]{fourier-otf}
\setmainfont{erewhon}[RawFeature=+onum;+ss01]
```

[3] Erewhon (with capital E) is fine with LuaTeX but would fail with XeTeX (`erewhon.fontspec` not found).

[4] Possible *options* are `loose`, `no-text`, `fakedscripts`, `Scale=` or any of the options described in sections 3.1 to 3.4.

3 What is provided?

Erewhon-Math provides all glyphs supplied by Fourier-GUT*enberg* plus all glyphs available in the `amssymb` and `latexsym` packages and many more. Therefore, the latter two packages *should not* be loaded as they might override Erewhon-Math glyphs.

Sans-serif, typewriter and fraktur styles are borrowed from Latin Modern fonts. See in section 3.6 on page 9 how to choose from other maths fonts for these styles.

A full list of available glyphs is shown in file `unimath-erewhon.pdf`.

3.1 Upright or slanted?

Package `unicode-math` follows TeX conventions for Latin and Greek letters: in maths mode, the default option (`math-style=TeX`) prints Latin letters $a \dots z$ $A \dots Z$ and lowercase greek letters $\alpha \dots \omega$ slanted (italic) while uppercase greek letters $\mathrm{AB}\Gamma \dots \Omega$ are printed upright. This can be changed by option `math-style` as shown in table 1.

Table 1: Effects of the `math-style` package option.

Package option	Latin	Greek
`math-style=ISO`	(a, z, B, X)	$(\alpha, \beta, \mathit{\Gamma}, \mathit{\Xi})$
`math-style=TeX`	(a, z, B, X)	$(\alpha, \beta, \Gamma, \Xi)$
`math-style=french`	$(a, z, \mathrm{B}, \mathrm{X})$	$(\upalpha, \upbeta, \Gamma, \Xi)$
`math-style=upright`	$(\mathrm{a}, \mathrm{z}, \mathrm{B}, \mathrm{X})$	$(\upalpha, \upbeta, \Gamma, \Xi)$

Bold letters are printed upright except lowercase Greek letters which are slanted (the default option is `bold-style=TeX`). This can be changed by option `bold-style` as shown in table 2.

Table 2: Effects of the `bold-style` package option.

Package option	Latin	Greek
`bold-style=ISO`	$(\boldsymbol{a}, \boldsymbol{z}, \boldsymbol{B}, \boldsymbol{X})$	$(\boldsymbol{\alpha}, \boldsymbol{\beta}, \boldsymbol{\mathit{\Gamma}}, \boldsymbol{\mathit{\Xi}})$
`bold-style=TeX`	$(\mathbf{a}, \mathbf{z}, \mathbf{B}, \mathbf{X})$	$(\boldsymbol{\alpha}, \boldsymbol{\beta}, \mathbf{\Gamma}, \mathbf{\Xi})$
`bold-style=upright`	$(\mathbf{a}, \mathbf{z}, \mathbf{B}, \mathbf{X})$	$(\boldsymbol{\upalpha}, \boldsymbol{\upbeta}, \mathbf{\Gamma}, \mathbf{\Xi})$

Other possible customisation: ∇ is printed upright and ∂ is printed slanted by default, but `nabla=italic` and `partial=upright` can change this.

All these options are offered by the `unicode-math` package, they can be added to the `\setmathfont` call as well[5], for example:

```
\setmathfont{Erewhon-Math.otf}[math-style=french,partial=upright]
```

will print for the code

```
\[ \frac{\partial f}{\partial x} = \alpha \symbf{V} + a\nabla\Gamma
                                  + \symbf{\beta}\symbf{M} \]
```

[5] IMHO it is easier to add *all options* to the `\setmathfont` command.

$$\frac{\partial f}{\partial x} = \upalpha\mathbf{V} + a\nabla\Gamma + \boldsymbol{\upbeta}\mathbf{M}$$

while the default settings would print

$$\frac{\partial f}{\partial x} = \alpha\mathbf{V} + a\nabla\Gamma + \boldsymbol{\beta}\mathbf{M}$$

Both shapes remain available anytime: `$\uppi,\itpi$` prints π, π.

If your text editor is able to handle Greek letters or maths symbols, they can be entered in the code instead control sequences (i.e. α, β, Γ,... for `\alpha`, `\beta`, `\Gamma`,...).

3.2 Character variants

Erewhon-Math provides fourteen "Character Variants" options, listed on table 3, to choose between different glyphs for Greek characters and some others. Alternative calligraphic capitals have been added for E, Q and T in version 0.50.

Table 3: Character variants.

	Default	Variant	Name
cv00	0	0̸	0
cv01	$\hbar$	$\hbar$	`\hslash`
cv02	$\emptyset$	$\varnothing$	`\emptyset`
cv03	ϵ	ε	`\epsilon`
cv04	κ	$\varkappa$	`\kappa`
cv05	π	ϖ	`\pi`
cv06	ϕ	φ	`\phi`
cv07	ρ	ϱ	`\rho`
cv08	σ	ς	`\sigma`
cv09	θ	ϑ	`\theta`
cv10	Θ	ϴ	`\Theta`
cv11	∂	∂	`\partial`
cv20	$\mathcal{E}$	$\mathcal{E}$	`\symcal{E}`
cv21	$\mathcal{Q}$	$\mathcal{Q}$	`\symcal{Q}`
cv22	$\mathcal{T}$	$\mathcal{T}$	`\symcal{T}`

For instance, to get `\epsilon` and `\phi` typeset as ε and φ instead of ϵ and ϕ, you can add option `CharacterVariant={3,6}` to the `\setmathfont` call:

```
\setmathfont{Erewhon-Math.otf}[CharacterVariant={3,6}]
```

This works for all shapes and weights of these characters: f.i. `$\symbf{\epsilon}$`, `$\symbf{\phi}$` are output as $\boldsymbol{\varepsilon}$, $\boldsymbol{\varphi}$ instead of $\boldsymbol{\epsilon}$, $\boldsymbol{\phi}$.

Similarly with `math-style=french`, `\epsilon` and `\phi` are output as ε and φ (upright).

Please note that curly braces are mandatory whenever more than one "Character Variant" is selected.

Note about `\hbar` (v 0.43): `unicode-math` defines `\hbar` as `\hslash` (U+210F) while `amsmath` provides two different glyphs (italic h with horizontal or diagonal stroke). `erewhon-math` now follows `unicode-math`; the italic h with horizontal stroke can be printed using `\hslash` or `\hbar` together with character variant `cv01` or with `\mithbar` (replacement for AMS' command `\hbar`).

3.3 Stylistic sets

Erewhon-Math provides six "Stylistic Sets" options to choose between different glyphs for families of maths symbols.

`StylisticSet=1`, alias[6] **`Style=mathcal`**, forces commands `\mathcal{}` and `\mathscr{}` to print $\mathcal{ABC}$ instead of $\mathscr{ABC}$ (the default). Please note that `unicode-math` recommends to use `\symcal` and `\symscr` instead of `\mathcal` and `\mathscr`.

If you want to use both commands `$\mathcal{ABC}$` and `$\mathscr{ABC}$` to print $\mathcal{ABC}$ and $\mathscr{ABC}$ respectively, you can use `unicode-math`'s option `range` this way:

```
\setmathfont{Erewhon-Math}[your options]
\setmathfont{Erewhon-Math}[range={cal,bfcal},StylisticSet=1]
```

Both lines are mandatory: the first one loads Erewhon-Math while the second one modifies `\mathcal{}` command's output.

`StylisticSet=3`, alias[6] **`Style=upint`**, converts integrals signs into their upright variants, see table 4.

Table 4: Style=upint (+ss03)

Command	`\int`	`\iint`	`\iiint`	`\iiiint`	`\oint`	`\oiint`	`\oiiint`	
Default	∫	∬	∭	⨌	∮	∯	∯	∰
Upright	∫	∬	∭	⨌	∮	∯	∯	∰

Command	`\intclockwise`	`\awint`	`\varointclockwise`	`\ointctrclockwise`
Default	∱	⨑	∲	∳
Upright	∱	⨑	∲	∳

`StylisticSet=4`, alias[6] **`Style=leqslant`**, converts (large) inequalities into their slanted variants, see table 5a on the following page.

`StylisticSet=5`, alias[6] **`Style=smaller`**, converts some symbols into their smaller variants, see table 5b on the next page.

[6] These `Style` aliases are provided by `fourier-otf.sty`.

Table 5: Stylistic Sets 4 and 5

(a) `Style=leqslant  (+ss04)`

Command	Default	Variant
`\leq`	≤	⩽
`\geq`	≥	⩾
`\nleq`	≰	⩽̸
`\ngeq`	≱	⩾̸
`\leqq`	≦	⫹
`\geqq`	≧	⫺
`\eqless`	⋜	⪕
`\eqgtr`	⋝	⪖
`\lesseqgtr`	⋚	⋚
`\gtreqless`	⋛	⋛
`\lesseqqgtr`	⪋	⪋
`\gtreqqless`	⪌	⪌
`\lesssim`	≲	≲
`\gtrsim`	≳	≳

(b) `Style=smaller  (+ss05)`

Command	Default	Variant
`\in`	∈	∊
`\ni`	∋	∍
`\mid`	∣	∣
`\nmid`	∤	∤
`\parallel`	∥	∥
`\nparallel`	∦	∦
`\parallelslant`	⫽	⫽
`\nparallelslant`	⫽̸	⫽̸

`StylisticSet=6`, alias[7] **`Style=subsetneq`**, converts some inclusion symbols, see table 6a.

`StylisticSet=7`, alias[7] **`Style=parallelslant`**, converts “parallel” symbols into their slanted variants, see table 6b.

Table 6: Stylistic Sets 6 and 7

(a) `Style=subsetneq  (+ss06)`

Command	Default	Variant
`\subsetneq`	⊊	⊊
`\supsetneq`	⊋	⊋
`\subsetneqq`	⫋	⫋
`\supsetneqq`	⫌	⫌

(b) `Style=parallelslant  (+ss07)`

Command	Default	Variant
`\parallel`	∥	⫽
`\nparallel`	∦	⫽̸
`\shortparallel`	∥	⫽
`\nshortparallel`	∦	⫽̸

To enable Stylistic Sets 4, 6 and 7 for Erewhon-Math, you should enter

```
\setmathfont{Erewhon-Math.otf}[StylisticSet={4,6,7}]  or
\usepackage[Style={leqslant,subsetneq,parallelslant}]{fourier-otf}
```

then, `\[x\leq y \quad A \subsetneq B\quad D \parallel D' \]` will print as

$$x \leqslant y \quad A \subsetneq B \quad D \mathbin{/\!/} D'$$

instead of

$$x \leq y \quad A \subsetneq B \quad D \parallel D'$$

[7] These `Style` aliases are provided by `fourier-otf.sty`.

3.4 Other font features

3.4.1 Oldstyle numbers

To get oldstyle numbers in maths, the feature `+onum` is available:

```
\setmathfont{Erewhon-Math.otf}[Numbers=OldStyle]  or
\usepackage[Style=fulloldstyle]{fourier-otf}
```

0123456789, **0123456789**

3.4.2 Delimiters' size

When switching from Type 1 to OpenType, Adobe has significantly increased[8] the sizes of Utopia's delimiters '()', '[]' and '{}'. Erewhon-Math has been built from Fourier (Utopia's Type 1 type faces[9]), while the Erewhon text fonts have been built from the OpenType version; the difference was visible on examples like (`$P(n)$`) which has been typeset as $(P(n))$ by versions up to 0.53.

This glitch is now fixed, you get now $(P(n))$, $[P[n]]$, $\{P\{n\}\}$. An option `Style=smalldelim` (`+ss09`), which can be passed either to the `fourier-otf` package or to the `\setmathfont` command, has been added in version 0.54 for backward compatibility: it reverts to the former behaviour.

3.5 Standard LaTeX math commands

All standard LaTeX maths commands, all `amssymb` commands and all `latexsym` commands are supported by Erewhon-Math, for some of them loading `fourier-otf.sty` is required.

Various wide accents are also supported:

☞ `\wideoverbar` and `\mathunderbar`[10]

$$\overline{x} \quad \overline{xy} \quad \overline{xyz} \quad \overline{A\cup B} \quad \overline{A\cup(B\cap C)\cup D} \quad \underline{m+n+p}$$

☞ `\widehat` and `\widetilde`

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

☞ `\widecheck` and `\widebreve`

$$\widecheck{x} \quad \widecheck{xxxx} \quad \widecheck{xxxxxx} \quad \breve{x} \quad \breve{xxxx} \quad \breve{xxxxxx}$$

[8] Actually +21% both in height and thickness!

[9] Scaled at 94% instead of 92% to match Erewhon text fonts.

[10] `\overline` and `\underline` are not font related, they are based on `\rule`.

☞ `\overparen` and `\underparen`

$$\overparen{x} \quad \overparen{xy} \quad \overparen{xyz} \quad \overset{\circ}{\overparen{A\cup B}} \quad \overset{\circ}{\overparen{A\cup(B\cap C)\cup D}} \quad \overset{2}{\overparen{x+y}} \quad \overset{26}{\overparen{a+b+\dots+z}}$$

$$\underparen{x} \quad \underparen{xz} \quad \underparen{xyz} \quad \underset{2}{\underparen{x+z}} \quad \underset{26}{\underparen{a+b+\dots+z}}$$

☞ `\overbrace` and `\underbrace`

$$\overbrace{a} \quad \overbrace{ab} \quad \overbrace{abc} \quad \overbrace{abcd} \quad \overbrace{abcde} \quad \overbrace{a+b+c}^{3} \quad \overbrace{a+b+\dots+z}^{26}$$

$$\underbrace{a} \quad \underbrace{ab} \quad \underbrace{abc} \quad \underbrace{abcd} \quad \underbrace{abcde} \quad \underbrace{a+b+c}_{3} \quad \underbrace{a+b+\dots+z}_{26}$$

☞ `\overbracket` and `\underbracket`

$$\overbracket{a} \quad \overbracket{ab} \quad \overbracket{abc} \quad \overbracket{abcd} \quad \overbracket{abcde} \quad \overbracket{a+b+c}^{3} \quad \overbracket{a+b+\dots+z}^{26}$$

$$\underbracket{a} \quad \underbracket{ab} \quad \underbracket{abc} \quad \underbracket{abcd} \quad \underbracket{abcde} \quad \underbracket{a+b+c}_{3} \quad \underbracket{a+b+\dots+z}_{26}$$

☞ `\overrightarrow` and `\overleftarrow`

$$\overrightarrow{v} \quad \overrightarrow{M} \quad \overrightarrow{vv} \quad \overrightarrow{AB} \quad \overrightarrow{ABC} \quad \overrightarrow{ABCD} \quad \overrightarrow{ABCDEFGH}.$$

$$\overleftarrow{v} \quad \overleftarrow{M} \quad \overleftarrow{vv} \quad \overleftarrow{AB} \quad \overleftarrow{ABC} \quad \overleftarrow{ABCD} \quad \overleftarrow{ABCDEFGH}$$

☞ `\overrightharpoon` and `\overleftharpoon`

$$\overrightharpoon{v} \quad \overrightharpoon{M} \quad \overrightharpoon{vv} \quad \overrightharpoon{AB} \quad \overrightharpoon{ABC} \quad \overrightharpoon{ABCD} \quad \overrightharpoon{ABCDEFGH}.$$

$$\overleftharpoon{v} \quad \overleftharpoon{M} \quad \overleftharpoon{vv} \quad \overleftharpoon{AB} \quad \overleftharpoon{ABC} \quad \overleftharpoon{ABCD} \quad \overleftharpoon{ABCDEFGH}$$

☞ `\underrightarrow` and `\underleftarrow`

$$\underrightarrow{v} \quad \underrightarrow{M} \quad \underrightarrow{vv} \quad \underrightarrow{AB} \quad \underrightarrow{ABC} \quad \underrightarrow{ABCD} \quad \underrightarrow{ABCDEFGH}.$$

$$\underleftarrow{v} \quad \underleftarrow{M} \quad \underleftarrow{vv} \quad \underleftarrow{AB} \quad \underleftarrow{ABC} \quad \underleftarrow{ABCD} \quad \underleftarrow{ABCDEFGH}$$

☞ `\underrightharpoon` and `\underleftharpoondown`

$$\underrightharpoon{v} \quad \underrightharpoon{M} \quad \underrightharpoon{vv} \quad \underrightharpoon{AB} \quad \underrightharpoon{ABC} \quad \underrightharpoon{ABCD} \quad \underrightharpoon{ABCDEFGH}.$$

$$\underleftharpoondown{v} \quad \underleftharpoondown{M} \quad \underleftharpoondown{vv} \quad \underleftharpoondown{AB} \quad \underleftharpoondown{ABC} \quad \underleftharpoondown{ABCD} \quad \underleftharpoondown{ABCDEFGH}.$$

☞ Finally `\widearc` and `\overrightarc` (loading `fourier-otf.sty` is required)

$$\widearc{AMB} \quad \overrightarc{AMB}$$

All extensible arrows provided by the `mathtools` package are available in the Erewhon-Math font (loading `fourier-otf.sty` is required), f.i.:

$$X \xLeftrightarrow{\text{above}} Y \xhookrightarrow[\text{under}]{} Z \xmapsto{\text{above}} W$$

A wide range of extensible vertical delimiters is provided:

$$\left/ \begin{pmatrix}a_1\\a_2\\a_3\end{pmatrix} \begin{bmatrix}a_1\\a_2\\a_3\end{bmatrix} \begin{Bmatrix}a_1\\a_2\\a_3\end{Bmatrix} \begin{vmatrix}a_1\\a_2\\a_3\end{vmatrix} \begin{Vmatrix}a_1\\a_2\\a_3\end{Vmatrix} \left\vvvert\begin{matrix}a_1\\a_2\\a_3\end{matrix}\right\vvvert \left\lceil\begin{matrix}a_1\\a_2\\a_3\end{matrix}\right\rceil \left\lfloor\begin{matrix}a_1\\a_2\\a_3\end{matrix}\right\rfloor \left\llbracket\begin{matrix}a_1\\a_2\\a_3\end{matrix}\right\rrbracket \left\langle\begin{matrix}a_1\\a_2\\a_3\end{matrix}\right\rangle \left\langle\!\!\left\langle\begin{matrix}a_1\\a_2\\a_3\end{matrix}\right\rangle\!\!\right\rangle \right\backslash$$

3.6 Mathematical alphabets

- All Latin and Greek characters are available in italic, upright, bold and bold italic via the `\symit{}`, `\symup{}`, `\symbf{}` and `\symbfit{}` commands.

- Calligraphic alphabet (`\symscr` or `\symcal` command)[11], uppercase:
  $\mathscr{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
  also in boldface (`\symbfscr` or `\symbfcal` command):
  $\boldsymbol{\mathscr{ABCDEFGHIJKLMNOPQRSTUVWXYZ}}$

- Blackboard-bold alphabet (`\symbb` command):

  $\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ}$
  $\mathbb{abcdefghijklmnopqrstuvwxyz} \quad \mathbb{0123456789}$

- Fraktur alphabet is borrowed from Latin Modern (`\symfrak` command):

  $\mathfrak{ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz}$

  but this can overwritten, i.e.

  ```
  \setmathfont{Asana-Math.otf}[range=frak,Scale=MatchUppercase]
  $\symfrak{ABCDEFGHIJKL...XYZ abcdefghijkl...xyz}$
  ```

  $\mathfrak{ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz}$

- Sans serif alphabet is borrowed from Latin Modern (`\symsfup` or `\symsfit` command):

  $\mathsf{ABCDEFGHIJKLMabcdefghijk} \quad \mathsfit{NOPQRSTUVWXYZmnopqrstuvwxyz}$

  but it can be borrowed from another maths font, i.e.

  ```
  \setmathfont{STIXTwoMath-Regular.otf}[range={sfup,sfit},
                                        Scale=MatchUppercase]
  $\symsfup{ABCD...klm}\quad\symsfit{NOPQ...xyz}$
  ```

  $\mathsf{ABCDEFGHIJKLMabcdefghijklm} \quad \mathsfit{NOPQRSTUVWXYZnopqrstuvwxyz}$

[11] See section 3.3 for alternate shapes.

☞ Typewriter alphabet is borrowed from Latin Modern (`\symtt` command):
`ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz`

but it can be borrowed from another Math font, i.e.

```
\setmathfont{STIXTwoMath-Regular.otf}[range=tt,Scale=MatchUppercase]
$\symtt{ABCDE...XYZ abcde...xyz}$
ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
```

Like Latin Modern, Erewhon-Math provides only four lowercase Latin letters in script (or calligraphic) shape: $\mathscr{e}$, $\mathscr{g}$, ℓ, $\mathscr{o}$ (`\mscre`, `\mscrg`, `\ell`, `\mscro`).

All others have to be borrowed from another maths font if needed, i.e.

```
\setmathfont{Garamond-Math.otf}[range=\symscr/latin,[12]
                                              Scale=MatchLowercase]
$\symscr{a}\symscr{b}\symscr{c} ... \symscr{z}$
```

$\mathscr{abcdefghijklmnopqrstuvwxyz}$

3.7 Bold variant

In case short maths formulas have to be printed in section titles, a *limited* bold variant has been added in version 0.54. Example of usage: **Einstein's equation $\boldsymbol{E = mc^2}$**

```
\setmathfont{Erewhon-Math-Bold.otf}[version=bold, options]
\section{\mathversion{bold} Einstein's equation $E=mc^2$}
```

It is also possible to use the `\boldmath` command:

```
\setmathfont{Erewhon-Math-Regular.otf}[BoldFont=Erewhon-Math-Bold.otf]
\section{\boldmath Einstein's equation $E=mc^2$}
```

3.8 Missing symbols

Erewhon-Math does not aim at being as complete as `STIXTwoMath-Regular` or `Cambria`, the current glyph coverage compares with TeXGyre maths fonts. In case some symbols do not show up in the output file, you will see warnings in the `.log` file, for instance:

```
Missing character: There is no ⥤ (U+2964) in font ErewhonMath
```

Borrowing them from a more complete font, say `Asana-Math`, is a possible workaround:

```
\setmathfont{Asana-Math.otf}[range={"2964},Scale=1.02]
```

scaling is possible, multiple character ranges are separated with commas:

```
\setmathfont{Asana-Math.otf}[range={"294A-"2951,"2964,"2ABB-"2ABE}]
```

Let's mention `albatross`, a useful tool to find out the list of fonts providing a given glyph: f.i. type in a terminal "`albatross -t U+2964`", see the manpage or `albatross-manual.pdf`.

3.9 Fourier ornaments

When loaded by `\usepackage{fourier-otf}`, Erewhon-Math loads `fourier-orns.sty` which provides all logos and ornaments available in Fourier-GUT*enberg*.

[12] `/latin`: lowercase (latin) only; `/Latin`: uppercase (latin) only.

`fourier-orns.sty` as of v2.x automatically fetches its glyphs in a specific OpenType font with LuaTeX or XeTeX engines and from a Type 1 font otherwise (pdfTeX).

- A variant of the euro symbol: `\eurologo` €, €, €, €.
- Two “starred” bullets: `\starredbullet` ✦, `\decosix` ✧.
- Decos and logos: `\warning` ⚠, `\noway` ⛔, `\caution` ⚠, `\bomb` 💣, `\decoone` ❋, `\decotwo` ❦, `\decothreeleft` ∽, `\decothreeright` ∽, `\decofourleft` ∽, `\decofourright` ∽, `\floweroneleft` ✿, `\floweroneright` ✿, `\lefthand` ☞, `\righthand` ☜, `\textxswup` ⚔, `\textxswdown` ⚔.
- Smileys: `\grimace` ☹, `\textthing` ⊤.
- Leaves: `\aldineleft` ☙, `\aldineright` ❧, `\aldine` ❦, `\aldinesmall` ❦, `\leafleft` ❧, `\leafright` ❧, `\leafNE` ❧, `\leafNW` ❧, `\leafSE` ❧, `\leafSW` ❧.
- Pilcrows: `\oldpilcrowone` ¶, `\oldpilcrowtwo` ¶, `\oldpilcrowthree` ¶, `\oldpilcrowfour` ¶, `\oldpilcrowfive` ¶$\overline{\text{aaaa}}$, `\oldpilcrowsix` ¶$\overline{\text{aaaaaaaaaa}}$.

All these logos and ornaments are also available as described in the `fournier-orns` documentation: for instance, you could type `{\FourierOrns E 2 F}` to get ✿ ⚠ ✿.

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

- `$\forbidden$` (⛔), `$\beware$` (⚠), `$\boom$` (💣),
- `$\thething$` (⊤) is a *QED symbol* for a false proof. Of course, you don’t need it!
- `$\xswordsup$` (⚔) and `$\xswordsdown$` (⚔) may be used as tags for a debated statement, or for anything else.

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