LORENZO PANTIERI

THE ARSCLASSICA PACKAGE

Ah homage to the Elements of Typographic Style

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The ArsClassica *package*
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TITLEBACK

This document was written with LaTeX on Mac using ArsClassica, a reworking of the ClassicThesis style designed by André Miede, inspired to the masterpiece *The Elements of Typographic Style* by Robert Bringhurst.

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ACKNOWLEDGEMENTS

We have seen that computer programming is an art,
because it applies accumulated knowledge to the world,
because it requires skill and ingenuity,
and especially because it produces objects of beauty.

— *Donald Ervin Knuth*

I wish first of all to thank the members of the Italian TeX and LaTeX User Group, in particular Claudio Beccari, Fabiano Busdraghi, Gustavo Cevolani, Rosaria D'Addazio, Agostino De Marco, Massimiliano Dominici, Gloria Faccanoni, Claudio Fiandrino, Heinrich Fleck, Enrico Gregorio, Massimo Guiggiani, Roberto Giacomelli, Gianluca Gorni, Maurizio Himmelmann, Jerónimo Leal, Paride Legovini, Lapo Filippo Mori, Gianluca Pignalberi, Luigi Scarso, Marco Stara, Andrea Tonelli, Ivan Valbusa, Emiliano Giovanni Vavassori and Emanuele Vicentini, for their invaluable aid during the writing of this work, the detailed explanations, the patience and the precision in the suggestions, the supplied solutions, the competence and the kindness: thank you, guys! Thanks also to all the people who have discussed with me on the forum of the Group, prodigal of precious observations and good advices. Finally, thanks to André Miede, for his wonderful ClassicThesis style, and to Daniel Gottschlag, who gave to me the hint for this original reworking.

♡

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1 FUNDAMENTALS

This chapter introduces the (truly simple) basic notions of ArsClassica and presents its fundamental ideas and distinctive features.

1.1 INTRODUCTION

The ArsClassica package changes some features of the ClassicThesis style, designed by André Miede. It allows to reproduce the layout of the LaTeX guide *The Art of Writing with LaTeX* (Pantieri and Gordini, 2017) and of this document.

1.2 USE

This package is shaped to be executed on a *complete* installation of TeX Live or MiKTeX, and uses freely available fonts. It works with the KOMA-Script classes (scrreprt, scrbook and scrartcl) and requires the classicthesis package. ArsClassica must be loaded *after* classicthesis:

```
\documentclass[⟨...⟩]{scrreprt} % or scrbook or scrartcl

\usepackage[⟨...⟩]{classicthesis}
\usepackage{arsclassica}

\begin{document}
...
\end{document}
```

For example, this document has been produced with the following code:

```
\documentclass[a4paper,twoside,openright,titlepage,
               headinclude,footinclude,BCOR5mm,
               numbers=noenddot,cleardoublepage=empty,
               tablecaptionabove]{scrreprt}

\usepackage{⟨...⟩}
\usepackage{subfig}
\usepackage[eulerchapternumbers,subfig,beramono,eulermath,pdfspacing]%
           {classicthesis}
\usepackage{arsclassica}

\begin{document}
...
\end{document}
```

It is recommended to use the `beramono` and `eulerchapternumbers` options together with ArsClassica.

1.3 STYLE

The typographical style achieved with ArsClassica differs from ClassicThesis in the following points:

- use of Iwona font, by Janusz Nowacki, for the sectioning unit titles (chapters, sections, subsections, sub-subsections, paragraphs and subparagraphs), for the description list labels, the headlines and the caption labels (ClassicThesis doesn't use any sans serif font);
- customized chapter numbers;
- semi-transparent headlines; the headlines are separated from the page number by a small rule;
- caption labels in boldface (ClassicThesis doesn't use any boldface font);
- itemize lists with semi-transparent bullets.

ArsClassica is designed to provide a ready-to-use typographical style: for this reason it has no loading options and it is *not* configurable or customizable in any way. If you change the previous settings, you'll risk to destroy the balance of the style, so it is *highly recommended* to keep them unchanged.

One of the principles of LaTeX is that it allows the author to take no interest in the typographical questions, permitting him to focus only on the structure and the contents of his document. This fact should always be kept in mind: using a style written by others, the user accepts all the typographical settings chosen for him by the author of the style, and he isn't forced to study typography to fine-tune the layout of his publications. This is the case of ArsClassica too: if you change its settings, you'll deny this philosophy and, consequently, you'll have to study (a lot of) typography to achieve acceptable results.

The style achieved with ArsClassica is *not* therefore configurable or customizable. The typographical style is very personal: if you like this package and find attractive the idea to take no interest in the problem of the style definition, then you'll use ArsClassica with satisfaction; otherwise, if you have different needs or you aren't satisfied with the layout of the package, then you should try other classes or packages, even building your own style.

1.4 IMPORTANT

To write a document according to the ArsClassica style, you have to follow some very simple rules.

- Don't change *for any reason* the ArsClassica settings (fonts, text body size, colors, ...).
- The sectioning unit titles (chapters, section, subsections, ...) have to be *one line long*, possibly in *plain text* (no symbols, formulas or code fragments). If you have titles longer than one line, try and rephrase them: you can almost always do it.

(a) Asia personas duo

(b) Pan ma signo

(c) Methodicamente o uno

(d) Titulo debitas

Figure 1: Tu duo titulo debitas latente

- In the table of contents and in the list of tables and figures, captions have to be *one line long*, possibly in *plain text*. Use the optional argument of sectioning commands and of `\caption`, if necessary.
- Don't use `tocaligned` and `dottedtoc` options of ClassicThesis: the default table of contents does the job very well (see the documentation of ClassicThesis for a nice discussion of this point).
- Don't use vertical or double rules in your tables (see the documentation of booktabs).
- Use footnotes and margin notes very sparingly.
- If your document includes graphs and plots, draw them using LaTeX (by TikZ and pgfplots, for example) and not an external software. This is the only way to get the best typographical outcome.

1.5 EXAMPLES

Please note that the content of this section is just some dummy text. It isn't a real language.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris.

A subsection

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

A sub-subsection

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

A PARAGRAPH Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna.

ANOTHER PARAGRAPH Cras nec ante, pellentesque a nulla, cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna

Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna.

MANE Lorem ipsum dolor sit amet, consectetuer adipiscing elit.

TEKEL Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris.

FARES Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla.

Table 1: Lorem ipsum dolor sit amet

Alkaloid	**Origin**
atropine	belladonna
morphine	poppy
nicotine	tobacco

Some formulas

Una formula in linea viene incorporata nel testo: $\lim_{n\to\infty}\sum_{k=1}^{n}\frac{1}{k^2}=\frac{\pi^2}{6}$, per esempio. Come si osserva, LaTeX fa *il possibile* per comprimerla e modificare il meno possibile l'interlinea nel capoverso che la contiene. Una formula in display viene invece composta da LaTeX su linee a parte, separate dal contesto con adeguati spazi bianchi per metterla in mostra e farla risaltare sulla pagina.

$$\lim_{n\to\infty}\sum_{k=1}^{n}\frac{1}{k^2}=\frac{\pi^2}{6} \tag{1}$$

Come si osserva, ora la formula risulta centrata, non compressa, e tutti i suoi elementi occupano il giusto spazio con un risultato finale di grande respiro.

Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim.

$$\int_a^{a+T} f(x)\,dx = \int_0^T f(x)\,dx \qquad \oint f(z)\,dz = 2\pi i \tag{2}$$

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante.

$$f(x_1,\dots,x_n)=\prod_{k=1}^{n}x_k \qquad \sum_{k=1}^{n}x_k^2=1 \qquad \left(\sum_{n}x_n^2\right)^{1/2} \tag{3}$$

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

$$\begin{bmatrix} a_{11} & \dots & a_{1n} \\ a_{21} & \dots & a_{2n} \\ \hdotsfor{3} \\ a_{n1} & \dots & a_{nn} \end{bmatrix} \tag{4}$$

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam

facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

$$\lim_{x \to 0} \frac{\sin x}{x} = 1 \qquad \lim_{n \to +\infty} f_n = \delta \tag{5}$$

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam.

$$n! = \begin{cases} 1 & \text{if } n = 0 \\ n(n-1)! & \text{if } n \geqslant 1 \end{cases} \tag{6}$$

Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit.

$$x_G = \frac{\sum\limits_{i=1}^{n} m_i x_i}{\sum\limits_{i=1}^{n} m_i} \tag{7}$$

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

$$\kappa = \frac{\xi}{E_{max}} \qquad E_{max} = \frac{2 m_e \beta^2 \gamma^2}{1 + 2\gamma m_e/m_x + (m_e/m_x)^2} \tag{8}$$

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetuer at, consectetuer sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui.

2 CODE

Package announcement and request for necessary packages.

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{arsclassica}[2017/10/31]
\RequirePackage{classicthesis}
\RequirePackage{caption}
```

Text body size.

```
\areaset[current]{370pt}{784pt}
```

Use of Iwona as font sans serif.

```
\renewcommand{\sfdefault}{iwona}
```

Customized chapter numbers.

```
\let\chapterNumber\undefined
\ifct@eulerchapternumbers
\newfont{\chapterNumber}{eurb10 scaled 5000}%
\else
\newfont{\chapterNumber}{pplr9d scaled 5000}%
\fi
```

Smallcaps sans serif.

```
\ifthenelse{\boolean{@minionprospacing}}%
{%
  \DeclareRobustCommand{\spacedallcaps}[1]{\sffamily%
  \textssc{\MakeTextUppercase{#1}}}%
  \DeclareRobustCommand{\spacedlowsmallcaps}[1]%
  {\sffamily\textssc{\MakeTextLowercase{#1}}}%
}{%
  \ifthenelse{\boolean{@pdfspacing}}%
  {%
    \microtypesetup{expansion=false}%
    \DeclareRobustCommand{\spacedallcaps}[1]%
    {\sffamily\textls[160]{\MakeTextUppercase{#1}}}%
    \DeclareRobustCommand{\spacedlowsmallcaps}[1]%
    {\sffamily\textls[80]{\scshape\MakeTextLowercase{#1}}}%
  }{%
    \RequirePackage{soul}
    \sodef\allcapsspacing{\sffamily\upshape}%
    {0.15em}{0.65em}{0.6em}%
    \sodef\lowsmallcapsspacing{\sffamily\scshape}%
    {0.075em}{0.5em}{0.6em}%
    \DeclareRobustCommand{\spacedallcaps}[1]%
    {\MakeTextUppercase{\allcapsspacing{#1}}}%
      \DeclareRobustCommand{\spacedlowsmallcaps}[1]%
      {\MakeTextLowercase{\textsc%
         {\lowsmallcapsspacing{#1}}}}%
```

```
 }%
}
```

Semi-transparent headlines and page numbers in Iwona.

```
\renewcommand{\sectionmark}[1]{\markright{\textsc%
{\MakeTextLowercase{\thesection}} \spacedlowsmallcaps{#1}}}
\lehead{\mbox{\llap{\small\thepage\kern1em\color{halfgray}\vline}%
\color{halfgray}\hspace{0.5em}\headmark\hfil}}
\rohead{\mbox{\hfil{\color{halfgray}%
\headmark\hspace{0.5em}}%
\rlap{\small{\color{halfgray}\vline}\kern1em\thepage}}}
\renewcommand{\headfont}{\normalfont\sffamily}
\renewcommand{\pnumfont}{\small\sffamily}
```

Sectioning unit titles and description list labels in Iwona.

```
\RequirePackage{titlesec}
   % parts
   \ifthenelse{\boolean{@parts}}%
   {%
   \titleformat{\part}[display]
      {\normalfont\centering\large}%
      {\thispagestyle{empty}\partname~\thepart}{1em}%
      {\color{Maroon}\spacedallcaps}
   }{\relax}
   % chapters
   \ifthenelse{\boolean{@linedheaders}}%
   {%
   \titleformat{\chapter}[display]%
     {\relax}{\raggedleft{\color{halfgray}%
     \chapterNumber\thechapter} \\ }{0pt}%
     {\titlerule\vspace*{.9\baselineskip}\raggedright%
     \spacedallcaps}%
     [\normalsize\vspace*{.8\baselineskip}\titlerule]%
   }{%
   \titleformat{\chapter}[block]%
     {\normalfont\Large\sffamily}%
     {{\color{halfgray}\chapterNumber\thechapter%
     \hspace{10pt}\vline} }{10pt}%
     {\spacedallcaps}}
   % sections
   \titleformat{\section}
     {\normalfont\Large\sffamily}{\textsc%
     {\MakeTextLowercase{\thesection}}}%
     {1em}{\spacedlowsmallcaps}
   % subsections
     \titleformat{\subsection}
     {\normalfont\sffamily\bfseries}{\textsc{\MakeTextLowercase%
     {\thesubsection}}}{1em}{\normalsize}
   % subsubsections
   \titleformat{\subsubsection}
     {\normalfont\sffamily\bfseries\itshape}{\textsc%
     {\MakeTextLowercase{\thesubsection}}}%
     {1em}{\normalsize\itshape}
   % paragraphs
   \titleformat{\paragraph}[runin]
```

```
    {\normalfont\normalsize\sffamily\bfseries}{\textsc%
    {\MakeTextLowercase{\theparagraph}}}%
    {0pt}{\spacedlowsmallcaps}
  % description labels
  \renewcommand{\descriptionlabel}[1]{\hspace*{\labelsep}%
  \bfseries\spacedlowsmallcaps{#1}}
  \titlespacing*{\chapter}{0pt}{1\baselineskip}{2\baselineskip}
  \titlespacing*{\section}{0pt}{2\baselineskip}%
    {.8\baselineskip}[\marginparsep]
  \titlespacing*{\subsection}{0pt}{1.5\baselineskip}%
    {.8\baselineskip}[\marginparsep]
  \titlespacing*{\paragraph}{0pt}{1\baselineskip}{1\baselineskip}

  \newcommand\formatchapter[1]{%
  \vbox to \ht\strutbox{
  \setbox0=\hbox{\chapterNumber\thechapter\hspace{10pt}\vline\ }
  \advance\hsize-\wd0 \advance\hsize-10pt\raggedright
  \spacedallcaps{#1}\vss}}
  \titleformat{\chapter}[block]
    {\normalfont\Large\sffamily}
    {\textcolor{halfgray}{\chapterNumber\thechapter}
    \hspace{10pt}\vline\ }{10pt}
  {\formatchapter}

  \clearscrplain
  \rofoot[\mbox{\makebox[0pt][l]{\kern1em\thepage}}]{}
```

Itemize lists with semi-transparent labels.

```
\renewcommand\labelitemi{\color{halfgray}$\bullet$}
```

Caption settings.

```
\captionsetup{format=hang,font=small,labelfont={sf,bf}}
\captionsetup[table]{skip=\medskipamount}
```

Hyper-reference settings.

```
\hypersetup{
  colorlinks=true, linktocpage=true, pdfstartpage=1,
  pdfstartview=FitV, breaklinks=true, pdfpagemode=UseNone,
  pageanchor=true, pdfpagemode=UseOutlines,
  plainpages=false, bookmarksnumbered,
  bookmarksopen=true, bookmarksopenlevel=1,
  hypertexnames=true, pdfhighlight=/O,
  urlcolor=webbrown, linkcolor=RoyalBlue,
  citecolor=webgreen,
  hyperfootnotes=false, pdfpagelabels,
  pdfcreator={pdfLaTeX},
  pdfproducer={LaTeX with ArsClassica}
}
```

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