The `oasics-v2016` Class *

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Printed April 14, 2016

1 Introduction

The `oasics-v2016` class assists in preparing articles for *Open Access Proceedings in Informatics* with LaTeX. It adapts LaTeX's standard `article` class to meet some requirements for OASIcs and provides a specific layout.

The package consists of the following files:

`oasics-v2016-manual.pdf` this documentation

`oasics-v2016-sample-article.tex` the LaTeX master file, to be used as a template

`oasics-v2016.cls` the LaTeX class file, providing adaptions for OASIcs and producing the layout

logos for OASIcs and Creative Commons

This documentation is not intended to give an introduction to LaTeX. For questions concerning TeX systems/installations or the LaTeX mark-up language in general please visit `www.tug.org`, `www.dante.de`, `uk.tug.org` or any other TeX user group worldwide. The essential reference for LaTeX is *Mittelbach F., Goossens M. (2004) The LaTeX Companion. 2nd edn.*, but there are many other good books delivering insight into LaTeX.

`oasics-v2016` tries to benefit as far as possible from standard LaTeX packages. (Have a look at `oasics-v2016.cls` to see which packages are used.) Therefore, it should also be easy to compile an already written manuscript with the `oasics-v2016` layout. To learn more about the underlying packages we refer to their documentations (try e.g. `texdoc [package name]` at your shell prompt or visit `tug.ctan.org`).

2 How to use the package

We suggest to employ a recent TeX installation: the most important distributions, TeX Live, MiKTeX/proTeXt and MacTeX, all provide at least 2015 versions. But older versions should (in principle) work as well.

To use `oasics-v2016`, put "oasics-v2016-sample-article.tex" and "oasics-v2016.cls" in your working directory, edit the file "oasics-v2016-sample-article.tex'

*This file was last revised April 14, 2016.

in your preferred text editor and run LaTeX as usual. (See the following section for more detailed advises.)

3 Some important settings and commands

3.1 Paper format

You can choose between the A4 format and the US-letter format. The respective options "`a4paper`" or "`letterpaper`" must be inserted in the optional argument of `\documentclass`. For OASIcs, A4 format is preferred.

3.2 Language

The document language is chosen in the optional argument of the `\documentclass` command in the LaTeX master file. Possible values are `USenglish`, `UKenglish` and many others.

3.3 Input encoding

`oasics-v2016` preselects UTF-8 as input encoding. Please do not change the input encoding because otherwise the volume compilation might become difficult.

3.4 Fonts

`oasics-v2016` uses the Latin Modern font family. This is a recent redesign of the good old Computer Modern fonts. Latin Modern provides a lot of characters and all neccessary math fonts. If your TeX installation does not provide the Latin Modern family, Computer Modern is used as a fallback.

`oasics-v2016` preloads the package "`amssymb`" to make additional mathematical symbols available. Other symbol packages, e.g. `stmaryrd`, may be added, of course. Moreover, the script math alphabet is provided by loading the `eucal` package.

3.5 Titles

The prelims of a OASIcs article is the only part where some specific commands are required:

- The title is tagged as usual with the `\title{...}` command. If you need a short form for the running head, use the optional `\titlerunning{...}`.
- Authors and their affiliations are rendered separately for OASIcs . Therefore, the standard LaTeX mechnism is replaced by the one of the `authblk` package: An author name is tagged with `\author` as usual. But this command has now an optional argument which may take the "footnote mark(s)" of associated affiliations, e.g. `\author[1,2]{John Q. Open}`. Any further authors are tagged with separate `\author` commands. The mark-up for affiliations is analogue: The command is `\affil`, with an obilgatory argument for the affiliation itself, and an optional argument which may capture a running number, e.g.: `\affil[1]{Department of ...\\... University\\... City\\open@dummyuni.org}`. – If you need a

short form for the author names in the running head, use the optional `\authorrunning{...}`.

- `\Copyright{...}` has an argument for the copyright holder, e.g. `\Copyright {John Q. Open}`. For OASIcs the CC BY 3.0 license is standard. (For information on Creative Commons licenses see creativecommons.org.)
- `\subjclass{...}` will output classification information, e.g. following the ACM 1998 Computing Classification System.
- `\keywords{...}` may be used to capture keywords.

The commands mentioned so far should be used in the document preamble of the LaTeX file. Providing a title and at least one author is required.

To typeset an abstract use `\begin{abstract}...\end{abstract}`. The environment must be placed after `\begin{document}` and `\maketitle`!

Note that subject classifications and keywords will be rendered together with the abstract. So it is necessary to use the `abstract` environment in order to get the output for `\subjclass` and `\keywords`.

3.6 Mathematical formulas

The `amsmath` package is preloaded, and your are encouraged to use the mark-up it provides instead of old-style standards like the `eqnarray` environment or the `\over` command.

3.7 Theorem-like environments

The `amsthm` package is preloaded, and the following environments are already introduced: `theorem`, `lemma`, `corollary`, `definition`, `example` and `remark`.

Setting up additional environments works with the `\newtheorem` mechanism from the `amsthm` package. For example, add to your document preamble

```
\theoremstyle{plain}
\newtheorem{conjecture}[theorem]{Conjecture}
```

See also the `amsthm` package documentation.

Available `\theoremstyle`s are: `plain`, `definition`, and `remark` (all from the `amsthm` package, but slightly modified for OASIcs).

Note that for OASIcs all numbered theorem-like environments should use one and the same counter, i. e. the counter of the default environment "`theorem`".

By default, theorem-like environments are numbered consecutively throughout the document. To number the environments subordinately within sections use the class option "`numberwithinsect`":
`\documentclass[numberwithinsect]{oasics-v2016}`.

3.8 Lists

List labels are set flush left. For enumerations with more than 9 items please insert `\addtolength\leftmargini{0.5em}` before `\begin{enumerate}`.

3.9 Listings

The `listings` package is preloaded. It provides the `lstlisting` environment to typeset displayed code. Here, the package is configured to get a grey background for listings.

The following example shows how to use captions and labels with the `lstlisting` environment:

```
\begin{lstlisting}[caption={Useless code},label=list:8-6,float,
                                          abovecaptionskip=-\medskipamount]
for i:=maxint to 0 do
begin
    j:=square(root(i));
end;
\end{lstlisting}
```

Note also the `float` option to make the listing floating. Instead of the `caption` option one might prefer the `title` option which outputs the argument without the "Listing" label. To globally change the label name from "Listing", add to your document preamble e.g.

```
\renewcommand*\lstlistingname{Algorithm}
```

Please read the package documentation for more information on the `lstlisting` environment and how to adapt it locally.

3.10 Graphics

The standard interface for graphic inclusion is the `\includegraphics` command provided by the `graphicx` package. Note that the `\graphicspath` command allows to declare one or more folders where the `graphicx` package looks for the image files; so providing the path with each `\includegraphics` command is not necessary.

3.11 Tables

Preloaded packages are: the `array` package (for introducing new column types), the `multirow` package (row spanning cells) and the `tabularx` package (automatic column width calculation).

In order to allow easy use of table footnotes, the `threeparttable` package is preloaded. Please read the short documentation in `threeparttables.sty` to see how the related commands are applied.

3.12 Floating graphics and tables

Floating graphics should be positioned on the top of the page whenever possible. The caption for figures should be below the figure.

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3.13 Rotating floats

The preloaded `rotating` package provides the two environments "`sidewaysfigure`" and "`sidewaystable`". They allow the rotation of floating objects.

3.14 Bibliography

It is recommended to use the standard bibliography mechanism. You might copy and paste your bibliography entries from elsewhere into the `thebibliography` environment or, more elegant and suggested, use BibTeX. For BibTeX, the standard bibliography style for OASIcs is "plainurl". Please do not not change the bibliographic style. OASIcs only allows numerical citation and forbids author-year citations. (So the `natbib` package is not used by `oasics-v2016`.)

3.15 Adding further packages and new macros

Feel free to add further packages if you need extra structural mark-up. But keep in mind that you should not change the general layout of the article. Changing text width or linespreads, for example, are forbidden.

Happy TeXing!