# Using the asmeart Class File

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11 Sept 1997

This document describes the features and usage of the asmeart class file for typesetting ASME Conference Papers for publicaton according to the guidelines set by ASME in their document, "The ASME Author's Kit: Guid to Publication of an ASME Conference Paper".

**What this class file does:**

This class file provides a modified "article" class for LaTeX 2ε, so most anything that would work for a "article" will work in your paper. The changes from the standard "article" class are:

1. Implements a `9pt` class option for basing all font calculations on nine-point font sizes.
2. Sets proper ASME margins and column separations.
3. Turns off section numbering (making the `\section` and `\section*` commands functionally equivalent).
4. Sets up ASME style sectioning commands.
5. Tweaks the float parameters to allow tighter spacing.
6. Redefines the `\maketitle` command.
7. Redefines the `abstract` environment.

**What this class *doesn't* do:**

This class only makes the changes *required* by ASME, it doesn't make changes for user preferences. Since the class is basically compatible with the standard LaTeX 2ε classes, the standard LaTeX 2ε customization methods and packages can be used.

Specifically, this class doesn't

1. Provide postscript fonts instead of Computer Modern, since the ASME style actually says you can use other serif and sans serif fonts. You can easily get postscript fonts by using[1]

   ```
   \usepackage{times,mathptm}
   ```

2. Provide nomenclature support. Do it by hand, or use the nomencl package.
3. Author-year citations. Use the natbib package along with the `menet` biblioagraphy style.
4. Doesn't force section headers to be uppercase. Do this by hand.

[1]Normally, I recommend using the "pslatex" package, but the "correction" of the font sizes it uses for helvetica and courier don't work well here, since the ASME guidelines specify exact font sizes.

**Using this class:**

The first step to using this class file is to tell LaTeX 2$_\varepsilon$that you want to use the thesis-me class. Unless you are also proofing it, you'll also want the `9pt` and `twocolumn` options as well:

```
\documentclass[9pt,twocolumn]{asmeart}
```

Then, you must provide the following information:

```
\author{authors}
\title{title}
```

Additionally, if you don't want the ME Heat Transfer Division address in your header, specificy another address with the `\institution` macro. To produce a correct title (you may have to tweak some of the spacing manually), simply start the document with `\maketitle`.

A sample file is included in the appendix, and is also available in `/stage/share/tex.local/samples/asmeart-template.tex`

**User Configuration:**

In order to allow simple user configuration of this package without needing to modify `asmeart.cls`, the class file loads in the tex file `asmeart.cfg` (stuck someplace where your `TEXINPUTS` setting will find it) after it has done all of it's configuration. This is a useful place to override the asmeart default settings and provide macros you always wish to have handy when typesetting theses.

**Suggestions on Typesetting ASME Papers**

In addition to using this class, there are a number of finer points to typing an ASME paper (or other publication).

Floating Figures

While LaTeX 2$_\varepsilon$'s handling of `figures` and `table` environments works well for most purposes, the typical mechanical engineering journal paper has a large number of figures and tables, and generally has to fit them into a rather limited number of pages. Because of these constraints, the asmeart class file tweaks LaTeX 2$_\varepsilon$'s handling of floats to allow it to pack figures in with less surrounding space.

However, further customization of float placement may be desired. If you continually have a lot of floats ending up in the wrong place, try these steps:

1. Don't use the `p` option when specifying figure placements. Use `[htb]`, `[ht]`, or `[hb]`, as appropriate.
2. Load the float package and use the `[H]` specifier, which forces LaTeX 2$_\varepsilon$ to place the figure at the current location instead of floating it.
3. Use the `\suppressfloats{}` command, described in *The LaTeX Book*.

Nomenclature Lists

ASME papers require nomenclature lists, which can be quite tedious to write. The nomencl package helps by automatically collecting nomenclature information (defined anywhere in the document with the `\nomenclature{}{}` command), sorting it, and formatting it. See the online nomencl documentation for more information.

By default, the nomenclature package only formats the nomenclature list as a `description` environment, which doesn't look good for long expressions. Instead, you can redefine the `theglossary` environment using something like:

```
\renewcommand{\nomname}{NOMENCLATURE}
\renewenvironment{theglossary}%
{\section*{\nomname}\begin{list}{}%
{\renewcommand{\makelabel}{\Nentrylabel}%
  \setlength{\itemsep}{-3pt}%
  \setlength{\labelwidth}{0.375in}%
  \setlength{\leftmargin}{\labelwidth+\labelsep}%
}}%
{\end{list}}
```

Additonially, it is often desirable to segregate nomenclature lists into roman, greek, and subscript sections. This can be done with the following code in your preamble:

```
\renewcommand{\nomgroup}[1]{%
  \ifthenelse{\equal{#1}{A}}{}{%
    \ifthenelse{\equal{#1}{G}}{%
      \item[Greek:]}{%
        \ifthenelse{\equal{#1}{S}}{%
          \item[Sub/Superscripts:]}{}}{}}{}}
```

See the nomencl documentation for further examples.

### Bibliographies

If you have all your bibliographic data in a `.bib` file, you can get proper ASME style author-year citations and reference lists by using the natbib package in conjuction with the `menet` bibliography style.

### Other Useful Packages

A number of other useful packages are available for help in producing high-quality papers for publication. All are available on MEnet systems:

| **Package** | **Function** |
|---|---|
| booktabs | Produces high quality tables (like this one) |
| pstcol | Produces high quality line drawings using PostScript |
| me-tools | Provides a number of useful math and mechanical engineering macros |
| graphicx | For the inclusion of graphics files |
| rotating | For including rotated material and figures |
| bm | For bolded math symbols |
| listing | For including formatted source code listings |
| caption2 | For better control of the `\caption` command |

## Questions? Problems? Suggestions?

Contact `kaszeta@me.umn.edu`.

**Appendix: A sample .tex file**

```
\documentclass[9pt,twocolumn]{asmeart}
\usepackage{times,mathptm}

\title{FLOW MEASUREMENTS IN FILM COOLING FLOWS\\[13pt]
    WITH LATERAL INJECTION}
\author{Richard W. Kaszeta, Rohit A. Oke, Steven W. Burd, and Terrence W. Simon}

\begin{document}
\maketitle

\begin{abstract}
Abstract
\end{abstract}

\section{INTRODUCTION}

\section{EXPERIMENTAL CONFIGURATION}

\section{EXPERIMENTAL RESULTS}

\section{CONCLUDING REMARKS}

\section{ACKNOWLEDGEMENTS}

\end{document}
```