

The `uw-wkrpt` document class*

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20 May 2003

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1 Introduction

At the University of Waterloo,¹ thousands of undergraduate students participate in the co-operative education program: a partnership between the University and businesses world-wide to provide first-hand experience for students.

As part of this program, students write work reports—both to enrich their own literary skills, and also to provide employers with research that is professional, analytical, and useful.

2 Justification

The Co-operative Education and Career Services (CECS) department mandates certain formatting and stylistic conventions. In addition, each department may

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¹<http://www.uwaterloo.ca/>

impose their own conventions above and beyond the general CECS conventions. Work reports are checked to ensure that they conform.

Human beings are fallable, however, and are liable to misinterpret the required conventions. Formatting a document according to fixed rules is something a computer should be apt at doing. Indeed, this \LaTeX document class implements the formatting so that is done automatically.

The inquiring mind may wonder, “why choose \LaTeX ?” We must consider that it is not a common application with which undergraduate students are familiar. Indeed, a word processor is more comfortable to most students. However, implementing the requirements of each style in a word processor is far from simple. Templates and styles are available to the student, but they are neither transparent to use nor easy to implement. \LaTeX is a simple, macro based language that can format text without great user effort. It can parse plain text with some sparse semantic tags to provide a decent report. Since it is coupled with the world-renowned \TeX typesetting engine, the resulting report is aesthetically pleasing and typeset tastefully.

A simple \LaTeX document can be constructed easily [1], with the knowledge of just a few commands. In the example on the following page, it is plain to see that the majority of the document is entered as plain text.

<p> Lorem ipsum do- lor sit amet, con- sectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim ven- iam, quis nostrud exercitation ullam- co laboris nisi ut aliquip ex ea com- modo consequat. </p>	<pre> 1 \documentclass{article} 2 \begin{document} 3 4 Lorem ipsum dolor sit amet, consectetur 5 adipisicing elit, sed do eiusmod tempor 6 incididunt ut labore et dolore magna aliqua. 7 Ut enim ad minim veniam, quis nostrud 8 exercitation ullamco laboris nisi ut 9 aliquip ex ea commodo consequat. 10 11 \end{document} </pre>
---	---

Each macro is prefixed by a backslash, and is followed by an alphabetic identifier. Parameters to these macros are encased within curly braces. On line 1, we declare that this document uses the `article` document class, which determines certain formatting options. The rest of the document is created with a `\begin{document}` command, and finished with an `\end{document}`.

Although the layout of the final text is not immediately obvious from the input that is keyed in, the input language is rather legible. One can argue that using a plain text interface allows the author to concentrate on the content of his message, and not the formatting. Since the computer does most of the formatting work, it is only necessary to proofread the document and tweak minor details.

3 A simple document

Sample documents that show the recommended layout are available. You can use these samples as a basis for your own report by removing the generic text, and replacing it with your own. As well, they provide examples for how to typeset common forms. These documents are stored as `uw-wkrpt-faculty.tex`, where *faculty* is one of:

`ece` for Electrical and Computer Engineering (E&CE) students, this implements the “E&CE work term report guidelines” [4];

`math` for Mathematics (Math) students, this implements the “Faculty of mathematics work report guidelines” [3];

`se` for Software Engineering (SE) students, this implements the “Software engineering work report guidelines” [5]; or

`cecs` for those students without special guidelines, see section 3.1

3.1 The document class

`uw-wkrpt` Every document needs to have a document class, so it must be specified. The simplest work report format is the one required by CECS and specified by Chapter 9 of the “Co-operative education student reference manual.” (CESRM) [2]. These guidelines are used by the majority of programs and can be used like so:

```
\documentclass{uw-wkrpt}
```

However, some programs have their own special requirements. Although there are a number of such programs, I have only implemented the guidelines for E&CE [4], Math [3], and SE [5]. To specify these special requirements, we provide an optional argument to the `\documentclass` command. For example, a Math student would use:

```
\documentclass[math]{uw-wkrpt}
```

Notice how `[math]` is enclosed by square brackets. Other valid options are `[ece]` and `[se]`.

As well, the letter of submittal may be formatted in either modified block, or block format. The default is modified block. This can be controlled with the `[modifiedletter]` and `[blockletter]` options.

Note that no text may appear before the `\documentclass` command.

3.2 The preamble

Between the `\documentclass{uw-wkrpt}` command and the `\begin{document}` command is the section known as the preamble. No text may occur here,² but commands to set initial values and options are declared at this point.

²In fact, if plain text does get put in the preamble \LaTeX will complain with the error:
! LaTeX Error: Missing `\begin{document}`.

3.2.1 Mandatory values

The following commands define initial values that must be set. These values are used to typeset the title page (see Section 3.3,) and the letter of submittal (see Section 3.3.1.)

<code>\title</code>	<p>The <code>\title{<i>text</i>}</code> command defines the work report's title. This will be capitalised on the title page, and included in the letter of submittal.</p> <p>This command is analogous to the standard L^AT_EX 2_ε command.</p>
<code>\author</code>	<p>The <code>\author{<i>text</i>}</code> command defines the author's name.</p> <p>This command is analogous to the standard L^AT_EX 2_ε command.</p>
<code>\uwid</code>	<p>The <code>\uwid{<i>text</i>}</code> command defines the author's student identification number.</p>
<code>\address</code>	<p>The <code>\address{<i>text</i>}</code> command defines the author's home address. Since an address can span multiple lines, each line is separated with a <code>*</code> command.</p> <pre>\address{200 University Ave. W.,* Waterloo, ON\\ N2L 3G1}</pre> <p>Also note the use of <code>_</code> to force a double-space between the province and the postal code.</p>
<code>\employer</code>	<p>The <code>\employer{<i>text</i>}</code> command defines the employer's name. Typically, this will be the company's business name.</p>
<code>\employeraddress</code>	<p>The <code>\employeraddress{<i>text</i>}</code> command defines the employer's short address, which should merely be the name of the city and province. For example, if the employer is located in Montréal, Québec:</p> <pre>\employeraddress{Montr\'eal, QC}</pre> <p>or in New York, New York, USA:</p> <pre>\employeraddress{New York, NY}</pre> <p>or in London, England:</p> <pre>\employeraddress{London, UK}</pre>
<code>\school</code>	<p>The <code>\school{<i>text</i>}</code> command defines the name of the school the author attends. This should be</p> <pre>\school{University of Waterloo}</pre> <p>for most students.</p>
<code>\faculty</code>	<p>The <code>\faculty{<i>text</i>}</code> command defines the faculty or program the author is in.</p>
<code>\email</code>	<p>The <code>\email{<i>text</i>}</code> command defines the author's e-mail address.</p>
<code>\term</code>	<p>The <code>\term{<i>text</i>}</code> command defines the previous academic term the author was enrolled in. For instance, if the author has only finished one school term, (<i>i.e.</i> she is in stream four), then she would use</p> <pre>\term{1A}</pre>

because she last attended school in her 1A term.

\program The **\program{*text*}** command defines the author's current program. A student in Computer Science would write

\program{Computer Science}

\chair The **\chair{*text*}** command defines the very important person to whom your letter of submittal is submitted. From Section 9.9.1 of the CESRM [2]:

If this is your first report (except if you are in Arts, Math, AHS, Geography or Science) address your letter to Mr. B. Lumsden, Director, Co-operative Education & Career Services. If it is not your first report or if you are in Arts, Math, Geography or Science, direct your letter to the Department Chair. If you are in AHS, your letter should be addressed to the Associate Dean of your faculty.³

\chairaddress The **\chairaddress{*text*}** command defines the address to which you will send your report. Like the **\address** command, you should break lines appropriately.

3.2.2 Optional values

Some commands are completely optional and do not have to be included in the preamble.

\date The **\date{*text*}** command defines an arbitrary date for the title page and the letter of submittal. By default, today's date is used.

This is analogous to the standard L^AT_EX 2_ε command.

\confidential The **\confidential{*text*}** command defines the confidentiality of the report. Most reports do not require this command. Refer to Section 9.7 of the CESRM [2] for more information. As an example, if the report is rated as "Confidential-1":

\confidential{Confidential-1}

Please be aware that there are certain restrictions for confidential reports. You must speak with your field co-ordinator or faculty before undertaking a confidential report. Most confidential reports are not marked until the following term. If you work for certain corporations, your work report cannot be confidential. If you are in certain faculties, your work report cannot be confidential. For more information, see section 9.7 of the CESRM [2] and Section 5 of the E&CE [4] and SE [5] guidelines.

There are several levels of confidentiality:

Not confidential These reports can be reviewed and evaluated by one or more markers.

Confidential-1 These reports must be stored safely, and may only be evaluated by one marker. No duplicates may be made.

³This statement was quoted on 24 April 2003.

Confidential-2 One particular aspect of the report may be subject to a non-disclosure agreement. This must be negotiated between the employer and a particular marker.

Confidential-3 Confidential data contained in the report has been altered to permit disclosure.

Confidential-4 The report cannot leave the employer and must be evaluated by a fellow employee.

Confidential reports are not eligible for an Outstanding grade. For a detailed discussion of the levels of confidentiality, see “Confidential work term reports” [6].

3.2.3 Accessing values

<code>\theauthor</code> <code>\thetitle</code> <code>\theuid</code> <code>\theaddress</code> <code>\theemployer</code> <code>\theemployeraddress</code> <code>\theschool</code> <code>\thefaculty</code> <code>\theemail</code> <code>\theterm</code> <code>\theprogram</code> <code>\thechair</code> <code>\thechairaddress</code> <code>\thedate</code> <code>\theconfidential</code>	<p>Each of these commands reproduce the text defined by the respective command defined in the previous sections. Although these macros can be used anywhere in the report, they are used primarily in the letter environment, see Section 3.3.1.</p> <p>Here is a more comprehensive example:</p> <p>Hello, my name is J. Doe, and the title of my report is “My first work report.”</p>	<pre> 1 \documentclass{uw-wkrpt} 2 \title{My first work report} 3 \author{J. Doe} 4 % ...more definitions ... 5 \begin{document} 6 7 Hello, my name is \theauthor, and the title 8 of my report is “\thetitle.” 9 10 \end{document} </pre>
---	---	--

3.3 The document

<code>document</code>	Any text within the <code>\begin{document}</code> and <code>\end{document}</code> commands are said to be within the document environment. This text will be typeset into the final output, and any text after the environment will be ignored.
<code>\maketitle</code>	To create the title page, the <code>\maketitle</code> command is used. This command should be invoked before any other text. All the necessary information is contained upon this page. A clear cover should be used to let this show through. This command is analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ command.

3.3.1 Preliminary pages

<code>\frontmatter</code>	The <code>\frontmatter</code> command is used to tell \LaTeX that the next sections should be typeset as preliminary pages. This typically involves lower-case roman page numbers.
---------------------------	---

This command is analogous to the standard $\LaTeX 2_{\epsilon}$ command in the `book` document class.

`letter` The `letter` environment does most of the difficult work involved in writing the letter of submittal. When `\begin{letter}` is invoked, the headings and salutations are laid out. On the next line, the body of the message should be entered. The environment is closed with the `\end{letter}` command, which generates the boilerplate disclaimer required by the guidelines, and generates the signature block.

The `letter` environment is able to get the information required to generate the address blocks, the date, the salutation and the signature because this information was defined in the preamble, see section 3.2.

The body of the report is required to contain certain information. According to Section 9.9.1 of the CESRM [2], this includes:

- report title (use `\thetitle`)
- report number (first, second, etc.)
- employer (use `\theemployer`)
- previous academic term (use `\theterm`)
- supervisor(s)
- department(s) worked for
- main activity of employer and department
- purpose of report
- acknowledgements and explanation of assistance
- statement of confidentiality, if required

Section 3.3 of the Math [3] guidelines also require that you include:

- your role in the company
- brief description of your duties

As well, you must also left-justify your letter. Although the Math department allows for memorandums of submittal, I do not support their creation.

Section 2 of the E&CE [4] and SE [5] guidelines also require that you:

- state who the report was written for

This environment is analogous to the standard $\LaTeX 2_{\epsilon}$ environment in the `letter` document class.

`\section` The `\section[short]{text}` command is set to suppress any section numbering in the preliminary pages. The *text* argument specifies the section heading, and *short* specifies the optional short heading for inclusion in the “Table of Contents”.

Unlike `\section*{<text>}`, these sections are mentioned in the Table of Contents. While Section 9.9.1 of the CESRM [2] states that preliminary pages do not appear in the Table of Contents, this is not an issue since their are nor proper `\sections` in a CESRM report. If there is a “Summary” section, it appears in the Body. For a Math report [3], the “Summary” is the only section in the preliminary pages, and it should be listed in the Table of Contents. For E&CE [4] and SE [5] reports, all preliminary sections are listed.

Section 9.9.3 of the CESRM recommends that section numbers appear only in the body of the report, see Section 3.3.2. This recommendation becomes a requirement in other programs.

As well, each `\section` is printed on a separate page. This is implied by the CESRM, and required for other programs. Since it does not hurt to put them on separate pages, it is always done.

This command is analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ command.

`\tableofcontents` These commands generate a “Table of Contents”, “List of Figures” and “List of Tables” respectively. Each table is on a separate page, and contains the appropriate list.

`\listoffigures`
`\listoftables`

Following Section 9.9.1 of the CESRM [2], the Table of Contents lists all sections, and subsections of a report. Each entry is connected by dotted tab leading to the page number, which is right-aligned.

The “List of Figures” and “List of Tables” are not considered sections, and are included in the “Table of Contents.” For E&CE [4] and SE [5] reports, however, they are considered sections and are listed.

These commands are analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ commands.

3.3.2 The body

`\mainmatter` The `\mainmatter` command is used to indicate the body of the report. This turns section numbering back on, and causes an arabic page number to appear on each page.

This command is analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ command.

`\section` The sectioning commands here will now provide numbered sections, labelled with the appropriate heading.
`\subsection`
`\subsubsection`

```

1  Primary
2
3  1.1 Premier
4
5  1.1.1 Primo
6
7  2 Secondary
8
9  2.1 Deuxième
10 2.1.1 Secundo
```

```

1 \begin{document}
2
3 \section{Primary}
4 \subsection{Premier}
5 \subsubsection{Primo}
6 \section{Secondary}
7 \subsection{Deuxi\`eme}
8 \subsubsection{Secundo}
9
10 \end{document}
```

These commands are analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ commands.

figure The **figure** and **table** environments are used to create a “float” which encapsulates a graphic or a **tabular** environment, respectively.

By defaults, floats try to place themselves at the top of the current page, however, Section 9.9.3 of the CESRM [2] suggests that figures and tables appear only after they are referenced in the text. Other programs require this behaviour. Therefore, a float will now try to place itself immediately after the `\begin{figure}` or `\begin{table}` command. If this is not possible, the float tries to place itself at the end of the current page. If this is still not possible, it will center itself on a dedicated page.

Figures must have their captions below, and tables must have their captions on top. Section 9.9.3 of the CESRM [2]. shows some examples.

These environments are analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ environments.

3.3.3 Back matter

\appendix The `\appendix` command indicates that section numbers should now be reset, and in uppercase letters. That is to say that the first `\section` command will be listed as appendix “A”.

Although appendices appear in the back matter, this command should be issues before the `\backmatter` command.

This command is analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ command.

\backmatter The `\backmatter` command is used to indicate the back of the report. This turns section numbering off once more.

This command is analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ command.

\bibliography The `\bibliography` command is used to insert the bibliography, or “References” section. This should come after the `\backmatter` command, and refer to a \BIBTeX database.

This command is analogous to the standard $\text{\LaTeX} 2_{\epsilon}$ command.

4 Implementation

4.1 Parsing options

Since this is a document class, the first thing to do is parse out the options that were passed in. To specify which program this work report is written for, the author passes either `math`, `ece` or `se` options. By default, we use the CESRM guidelines [2].

So, the options are declared, and boolean flags of the form `uwkrpt@⟨program⟩` are declared.

```

1 \newif\ifuwkrpt@math \uwkrpt@mathfalse
2 \DeclareOption{math}{%
3   \uwkrpt@mathtrue
4   \write10{([math] Mathematics report)}}
5 \newif\ifuwkrpt@ece \uwkrpt@ecfalse
6 \DeclareOption{ece}{%
7   \uwkrpt@ecettrue

```

```

8 \write10{([ece] Electrical and Computer Engineering report)}
9 \newif\ifuwwkrpt@se \uwwkrpt@sefalse
10 \DeclareOption{se}{%
11 \uwwkrpt@settrue
12 \write10{([se] Software Engineering report)}}

```

Work reports must always be set in 12 pt. type. Warn the author if he specifies smaller type, and use 12 pt. nevertheless.

```

13 \DeclareOption{10pt}{\ClassWarning{uw-wkrpt}{%
14 You requested a 10pt font but reports must be 12pt}}
15 \DeclareOption{11pt}{\ClassWarning{uw-wkrpt}{%
16 You requested a 11pt font but reports must be 12pt}}

```

Finally, we declare a `blockletter` option that formats the letter of submittal in block format. The default letter format is modified block, which corresponds to `modifiedletter`.

```

17 \newcommand{\@blockletter}{}
18 \DeclareOption{modifiedletter}{%
19 \newcommand{\@blockletter}{}
20 \DeclareOption{blockletter}{%
21 \newcommand{\@blockletter}{\setlength{\parindent}{0pt}}}

```

All of the options specific to this class are declared. The rest of the options will be passed to the standard L^AT_EX 2_ε article document class, the options processed, and the article class loaded.

```

22 \DeclareOption*{\PassOptionsToClass {\CurrentOption}{article}}
23 \ProcessOptions
24 \LoadClass[titlepage,12pt]{article}

```

To parse the required arguments, the `ifthen` package is loaded. This way, the standard L^AT_EX facilities can be used instead of the T_EX `\if` primitives.

```

25 \RequirePackage{ifthen}

```

4.2 Page margins

The standard North American paper size is U.S. letter, sized 8.5 by 11 inches. This is the default.

The left and right margins will be set to 1.5 inches wide; the top and bottom margins will be set to 1.0 inches wide. This is required by Section 9.8.5 of the CESRM [2].

We piggy-back on the standard `fullpage` package, but use one of the internal variables `\FP@margin`, so we need to declare this length if it does not exist.

```

26 \RequirePackage{fullpage}
27 \ifx\FP@margin\undefined
28 \newlength{\FP@margin}
29 \fi
30 \setlength{\FP@margin}{1.5in}
31 \setlength{\textwidth}{\paperwidth}
32 \addtolength{\textwidth}{-2\FP@margin}
33 \setlength{\oddsidemargin}{\FP@margin}

```

```

34 \addtolength{\oddsidemargin}{-1in}
35 \setlength{\evensidemargin}{\oddsidemargin}

```

4.3 Spacing

Spacing is rather important in this document, as there are several requirements for line spacing.

To facilitate changing from single-spaced to one-and-half-spaced or double-spaced throughout the document, the `setspace` package is loaded. See Section 9.8.5 of the CESRM [2].

For Mathematics students, their reports must be double-spaced (See Section 3.1 of the Math guidelines [3].) For Software Engineering students, their reports must be one-and-half-spaced (See Section 2 of the SE guidelines [5].)

```

36 \RequirePackage{setspace}
37 \newcommand{\uwkrpt@spacing}{\doublespacing}
38 \ifthenelse{\boolean{uwkrpt@se}}
39 {\renewcommand{\uwkrpt@spacing}{\onehalfspacing}}{}

```

Each paragraph must be followed by a blank line, see Section 9.8.5 of the CESRM [2]. Instead of introducing a completely blank line, which is hideous due to spacing issues, we space each paragraph apart by an ex-height.⁴

```

40 \newlength{\uwkrpt@parskip}
41 \setlength{\uwkrpt@parskip}{1ex}
42 \setlength{\parskip}{\uwkrpt@parskip}

```

4.4 Miscellaneous packages

The `url` package is also loaded, since it breaks URLs⁵ and URIs⁶ across lines. However, the default typewriter font is unappealing in plain text, so it has been switched to sans-serif.

```

43 \RequirePackage{url}
44 \urlstyle{sf}

```

4.5 Mandatory and optional values

We override the standard L^AT_EX commands `\title`, `\author`, and `\date`.

`\title` The title must be defined, and is therefore enforced. See Section 3.2.1.

```

45 \renewcommand{\title}[1]{%
46   \renewcommand{\@title}{#1}%
47   \renewcommand{\@@title}{#1}}
48 \newcommand{\@@@title}{\ClassError{uw-wkrpt}%
49   {No \noexpand\title given}{} }

```

⁴This is the height of the lower-case letter ‘x’.

⁵Uniform Resource Locators

⁶Uniforce Resource Identifiers

`\author` The author must be defined, and is therefore enforced. See Section 3.2.1.

```

50 \renewcommand{\author}[1]{%
51   \renewcommand{\@author}{#1}%
52   \renewcommand{\@@author}{#1}}
53 \newcommand{\@@author}{\ClassError{uw-wkrpt}%
54   {No \noexpand\author given}{}}
```

`\date` The date defaults to today's date. This is still an optional command, see Section 3.2.2.

```

55 \renewcommand{\date}[1]{%
56   \renewcommand{\@date}{#1}%
57   \renewcommand{\@@date}{#1}}
58 \newcommand{\@@date}{\today}
```

`\uwid` New variables which are defined. These, like the ones above, are used to construct the title page. As well, they can be used to construct the letter of submittal.

`\address` The following are mandatory values, see Section 3.2.1.

`\employer`

`\employeraddress`

```

59 \newcommand{\uwid}[1]{\renewcommand{\@uwid}{#1}}
60 \newcommand{\@uwid}{\ClassError{uw-wkrpt}%
61   {No \noexpand\uwid given}{}}
62 \newcommand{\address}[1]{\renewcommand{\@address}{#1}}
63 \newcommand{\@address}{\ClassError{uw-wkrpt}%
64   {No \noexpand\address given}{}}
65 \newcommand{\employer}[1]{\renewcommand{\@employer}{#1}}
66 \newcommand{\@employer}{\ClassError{uw-wkrpt}%
67   {No \noexpand\employer given}{}}
68 \newcommand{\employeraddress}[1]{\renewcommand{\@employeraddress}{#1}}
69 \newcommand{\@employeraddress}{\ClassError{uw-wkrpt}%
70   {No \noexpand\employeraddress given}{}}
71 \newcommand{\school}[1]{\renewcommand{\@school}{#1}}
72 \newcommand{\@school}{\ClassError{uw-wkrpt}%
73   {No \noexpand\school given}{}}
74 \newcommand{\faculty}[1]{\renewcommand{\@faculty}{#1}}
75 \newcommand{\@faculty}{\ClassError{uw-wkrpt}%
76   {No \noexpand\faculty given}{}}
77 \newcommand{\email}[1]{\renewcommand{\@email}{#1}}
78 \newcommand{\@email}{\ClassError{uw-wkrpt}%
79   {No \noexpand\email given}{}}
80 \newcommand{\term}[1]{\renewcommand{\@term}{\textsc{\lowercase{#1}}}}
81 \newcommand{\@term}{\ClassError{uw-wkrpt}%
82   {No \noexpand\term given}{}}
83 \newcommand{\program}[1]{\renewcommand{\@program}{#1}}
84 \newcommand{\@program}{\ClassError{uw-wkrpt}%
85   {No \noexpand\program given}{}}
86 \newcommand{\chair}[1]{\renewcommand{\@chair}{#1}}
87 \newcommand{\@chair}{\ClassError{uw-wkrpt}%
88   {No \noexpand\chair given}{}}
89 \newcommand{\chairaddress}[1]{\renewcommand{\@chairaddress}{#1}}
90 \newcommand{\@chairaddress}{\ClassError{uw-wkrpt}%
```

```

91      {No \noexpand\chairaddress given}{}}

\confidential \confidential is an optional value, see Section 3.2.2. If it is empty, it will be
              ignored. Since most reports are non-confidential, this is the default value.
92 \newcommand{\confidential}[1]{\renewcommand{\@confidential}{#1}}
93 \newcommand{\@confidential}{}

\thetitle    The following commands are defined to access these values of these new variables
\theauthor   in case the author wishes to refer to them within the document.
\thedata     94 \newcommand{\thetitle}{\@title}
\theuid      95 \newcommand{\theauthor}{\@author}
\theaddress  96 \newcommand{\theuid}{\@uid}
\theemployer 97 \newcommand{\theaddress}{\@address}
\theemployeraddress 98 \newcommand{\theemployer}{\@employer}
\theschool   99 \newcommand{\theemployeraddress}{\@employeraddress}
\thefaculty  100 \newcommand{\theschool}{\@school}
\theemail    101 \newcommand{\thefaculty}{\@faculty}
\theterm     102 \newcommand{\theemail}{\@email}
\theprogram  103 \newcommand{\theterm}{\@term}
\thechair    104 \newcommand{\theprogram}{\@program}
\thechairaddress 105 \newcommand{\thechair}{\@chair}
\thechairaddress 106 \newcommand{\thechairaddress}{\@chairaddress}
              107 \newcommand{\thedata}{\@date}
              108 \newcommand{\theconfidential}{\@confidential}

```

4.6 Title page

We require the textcase package to provide the `\MakeTextUppercase{<text>}` command.

```

109 \RequirePackage{textcase}

\maketitle   The title page must be laid out in a certain format, for an example see Figure 1
              of Section 9.9.1 of the CESRM [2].
110 \renewcommand{\maketitle}{%
111   \begin{titlepage}
112   \begin{singlespacing}
113   \let\footnotesize\small
114   \let\footnoterule\relax
115   \let \footnote \thanks
116   \begin{center}
117     {\large \MakeTextUppercase{\@school} \par \@faculty}%
118   \end{center}
119   \null\vfill%
120   \begin{center}%
121     {\huge \MakeTextUppercase{\@title} \par}%
122   \end{center}\par
123   \null\vfill%
124   \begin{center}%
125     {\large \@employer\ \ \@employeraddress\par \textit{\@confidential}}%

```

```

126 \end{center}\par
127 \null\vfill%
128 \begin{center}%
129   {\large
130     Prepared by\\
131     \begin{tabular}[t]{c}%
132       \@author\\
133       ID \#\@uwid\\
134       \@email\\
135       \@term{} \@program
136     \end{tabular}\par}%
137   {\large \@date \par}%      % Set date in \large size.
138 \end{center}
139 \@thanks
140 \end{singlespacing}
141 \end{titlepage}%

```

After defining the title page, commands we no longer need are let go.

```

142 \setcounter{footnote}{0}%
143 \global\let\thanks\@gobble
144 \global\let\maketitle\relax
145 \global\let\@thanks\@empty
146 \global\let\@author\@empty
147 \global\let\@date\@empty
148 \global\let\@title\@empty
149 \global\let\title\relax
150 \global\let\author\relax
151 \global\let\date\relax
152 \global\let\and\relax
153 }

```

As well, this page should have no page numbering.

4.7 Letter of submittal

letter The **letter** environment simplifies the process of writing a letter of submittal.

```

154 \newenvironment{letter}{%

```

We turn off page numbering for the letter. We use `\everyvbox` to suppress the page numbering on every page. This is much better than trying to save the page numbering and then restore it.

```

155 \everyvbox={\thispagestyle{empty}}%

```

Using `\@setletterpagenum`, we decide on the logical page number for the letter of submittal. For the declaration of this macro, see Section 4.9.

```

156 \@setletterpagenum%

```

Due to reasons I cannot comprehend, Section 3.3 of the Math guidelines [3] requires that the letter of submittal be left-justified.

```

157 \ifthenelse{\boolean{uwwkrpt@math}}
158   {\raggedright}{\par}

```

Using `\@blockletter`, we decide whether we should be using modified block layout, or full block. For the declaration of this macro, see Section 4.1.

```
159 \@blockletter%
```

Then, the letter is set to single-spaced, since it is not part of the report; but rather an insert.

```
160 \singlespacing%
```

The header block is created. First, the author and the author's address; then the current date; then the receiver of the report and his address; and finally the salutation.

```
161 \noindent\@author\\\@address\par\noindent%
```

```
162 \@@date \par\noindent%
```

```
163 \@chair, Chair\\\*\@chairaddress\par\noindent%
```

```
164 Dear \@chair:%
```

Create a subject line, much like formal business letters of old.

```
165 \begin{center}\textbf{Re: Submission of my work term report.}\end{center}}
```

The author types her letter, and mentions all the things she is required to mention. See Section 3.3.1 for a full list.

When she is done, she ends the environment. This triggers the disclaimer boilerplate, required by Section 9.9.1 of the CESRM [2].

```
166 {\par I hereby confirm that I have received no further help other
```

```
167 than what is mentioned above in writing this report.
```

The E&CE [4] and SE [5] guidelines require an additional boilerplate message. I will include this boilerplate in the Math report, even though it does not require it.

```
168 \ifthenelse{\boolean{uwwkrpt@ece}
```

```
169 \or \boolean{uwwkrpt@math}
```

```
170 \or \boolean{uwwkrpt@se}}}
```

```
171 {I also confirm that this report has not been previously submitted
```

```
172 for academic credit at this or any other academic institution.}
```

In other programs, the following boilerplate is required. See Section 9.9.1 of the CESRM [2].

```
173 {This report was written entirely by me and has not received
```

```
174 any previous academic credit at this or any other institution.}
```

The Faculty of Mathematics has a special request, since they ask employers to perform technical marking. It is included after the legal boilerplate. See Figure 4 of the Math guidelines [3].

```
175 \ifthenelse{\boolean{uwwkrpt@math}}{%
```

```
176 \par The Faculty of Mathematics requests that you evaluate this report
```

```
177 for command of topic and technical content/analysis. Following your
```

```
178 assessment, the report, together with your evaluation, will be submitted
```

```
179 to the Math Undergrad Office for evaluation on campus by qualified
```

```
180 work report markers. The combined marks will determine whether the
```

```
181 report will receive credit and whether it will be considered for an
```

```
182 award.
```

```

183 \par I would like to thank you for your assistance in preparing this
184 document.}{}%

```

With the legal requirements completed, the signature block can be generated. The signature line is only 3 inches long and 0.3 in tall, but that should be sufficient for most purposes. To satisfy Section 9.1 of the CESRM [2], the student's name and ID are listed below the signature line.

```

185 \par\noindent
186 \begin{minipage}{\textwidth}
187 \setlength{\parskip}{\uwwkrpt@parskip}
188 \vspace*{\uwwkrpt@parskip}
189 Yours sincerely,\,%
190 \rule{0in}{0.3in}\,%{\hrule \@width 3in}%
191 \noindent\@author, \@uwid
192 \par\noindent
193 Encl.%
194 \end{minipage}

```

Now that the letter is done, we set the correct page number for pages that follow the letter, and then restore double-spacing.

```

195 \@setpostletterpagenum\uwwkrpt@spacing%

```

All the excess variables that were used can now be let go.

```

196 \global\let\@author\@empty
197 \global\let\@title\@empty
198 \global\let\@date\@empty
199 \global\let\@uwid\relax
200 \global\let\@uwid\@empty
201 \global\let\@email\relax
202 \global\let\@email\@empty
203 \global\let\@employer\relax
204 \global\let\@employer\@empty
205 \global\let\@employeraddress\relax
206 \global\let\@employeraddress\@empty
207 \global\let\@address\relax
208 \global\let\@address\@empty
209 \global\let\@chair\relax
210 \global\let\@chair\@empty
211 \global\let\@chairaddress\relax
212 \global\let\@chairaddress\@empty
213 \global\let\@school\relax
214 \global\let\@school\@empty
215 \global\let\@faculty\relax
216 \global\let\@faculty\@empty
217 \global\let\@term\relax
218 \global\let\@term\@empty
219 \global\let\@program\relax
220 \global\let\@program\@empty
221 \global\let\@confidential\relax
222 \global\let\@confidential\@empty
223 }

```

4.8 Formatting sections

We shall emulate the `\frontmatter`, `\mainmatter`, and `\backmatter` commands from the `book` document class. Front matter pages are numbered with roman numerals; main and back matter pages are numbered with arabic numerals. See Section 9.8.5 of the CESRM [2].

In the front and back matter, the `\section` command does not generate headers with section numbers, but does enter them into the Table of Contents.

`\frontmatter` A fresh page is started, the sections are unnumbered, and the page numbers are lower-case roman numerals.

```
224 \newcommand{\frontmatter}{%
225   \clearpage
226   \@notmainsect%
227   \pagenumbering{roman}%
228   \uwwkrpt@spacing%
229 }
```

`\mainmatter` A fresh page is started, the sections are numbered, and the page numbers are arabic numerals.

```
230 \newcommand{\mainmatter}{%
231   \clearpage
232   \@mainsect%
233   \pagenumbering{arabic}%
234 }
```

Section 3.1 of the Math guidelines [3] state that numbered sections should not have page breaks between them. This is why we restore `\section` to its original form.

```
234 \ifthenelse{\boolean{uwwkrpt@math}}{\let\section\section@rig}
```

`\dotzero` The Math guidelines [3] imply that numbered `\sections` must be of the form “1.0”, not the default “1”.

```
\@secdotzerostart
\@secdotzeroend
235 \global\def\dotzero{}
236 \global\def\@secdotzerostart##1{}
237 \global\def\@secdotzeroend##1{}
238 \ifthenelse{\boolean{uwwkrpt@math}}{%
239   \renewcommand{\@secdotzerostart}[1]{%
240     \let\quad@rig\quad
241     \ifthenelse{\equal{##1}{section}}{%
242       \renewcommand{\quad}{.0\quad@rig}%
243       \renewcommand{\dotzero}{.0}}{\renewcommand{\dotzero}{}}}
244   }
245   \renewcommand{\@secdotzeroend}[1]
246   {\ifthenelse{\equal{##1}{section}}{\let\quad\quad@rig}}
247 }{}%
248 }
```

`\appendix` The page numbers turn Roman here. The only change is that for Math, we eliminate the “.0” trailer, as “Section A.0” looks silly.

```
249 \let\appendix@rig\appendix
250 \renewcommand{\appendix}{%
251   \@mainsect%
252   \ifthenelse{\boolean{uwkrpt@math}}{%
253     \renewcommand{\@secdotzerostart}[1]{\renewcommand{\dotzero}{}}
254     \renewcommand{\@secdotzeroend}[1]{
255       }{}%
256   \appendix@rig%
257 }
```

`\backmatter` A fresh page is started, and the sections are unnumbered.

```
258 \newcommand{\backmatter}{%
259   \clearpage
260   \@notmainsect%
261   \ifthenelse{\boolean{uwkrpt@math}}%
262     {\renewcommand{\section}{\clearpage\section@rig}}{}%
263 }
```

`summary` Much like the **abstract** environment in standard L^AT_EX, the **summary** environment should be used for typesetting summaries. However, all it does is suppress the section numbers. This environment should only be used by people following the CESRM [2] guidelines. Other programs place their “Executive Summary”, “Summary”, or “Abstract” in different places.

```
264 \newenvironment{summary}
265   {\@notmainsect}
266   {\@mainsect}
```

`\@notmainsect` This is the macro that turns off section numbers. It does this by redefining certain functions to be much simpler, which implies that it no longer compensates from the prefixed number.

This macro was inspired by the standard L^AT_EX book class.

```
267 \newcommand{\@notmainsect}{%
268   \def\@sect##1##2##3##4##5##6[##7]##8{%
269     \@tempskipa ##5\relax
270     \ifdim \@tempskipa>\z@
271       \begingroup
272         ##6{%
273           \@hangfrom{\hskip ##3}%
274           \interlinepenalty \@M ##8\@par}%
275       \endgroup
276       \csname ##1mark\endcsname{##7}%
277       \addcontentsline{toc}{##1}{##7}%
278     \else
279       \def\@svsechd{%
280         ##6{\hskip ##3\relax
281           \@svsec ##8}%
282     }
```

```

282         \csname ##1mark\endcsname{##7}%
283         \addcontentsline{toc}{##1}{##7}}%
284     \fi
285     \@xsect{##5}}%
286 }

```

`\@mainsect` This is the macro that turns on section numbers. It redefines certain functions to be exactly like their standard forms.

This macro was inspired by the standard L^AT_EX book class.

```

287 \newcommand{\@mainsect}{%
288   \def\@sect##1##2##3##4##5##6[##7]##8{%
289     \ifnum ##2>\c@secnumdepth
290       \let\@svsec\@empty
291     \else
292       \refstepcounter{##1}%
293       \@secdotzerostart{##1}
294       \protected@edef\@svsec{\@seccntformat{##1}\relax}%
295       \@secdotzeroend{##1}
296     \fi
297     \@tempskipa ##5\relax
298     \ifdim \@tempskipa>\z@
299       \begingroup
300         ##6{%
301           \@hangfrom{\hskip ##3\relax\@svsec}%
302           \interlinepenalty \@M ##8\@par}%
303       \endgroup
304       \csname ##1mark\endcsname{##7}%
305       \addcontentsline{toc}{##1}{%
306         \ifnum ##2>\c@secnumdepth \else
307           \protect\numberline{\csname the##1\endcsname\dotzero}
308         \fi
309         ##7}%
310     \else
311       \def\@svsechd{%
312         ##6{\hskip ##3\relax
313         \@svsec ##8}%
314         \csname ##1mark\endcsname{##7}%
315         \addcontentsline{toc}{##1}{%
316           \ifnum ##2>\c@secnumdepth \else
317             \protect\numberline{\csname the##1\endcsname\dotzero}
318           \fi
319           ##7}}%
320     \fi
321     \@xsect{##5}}%
322 }

```

`\section` Every section must start on a separate page. Overloading the `\section` command ensures this. Although the CESRM [2] implies this, Math [3], and Engineering demand this, see section 3.1 of the Math guidelines [3]; and section 2 of the

E&CE [4] and SE [5] guidelines.

```
323 \let\section@rig\section
324 \renewcommand{\section}{\clearpage\section@rig}
```

4.9 Tables and Lists

These functions are used to decide what page numbers are used for the front matter section.

`\@setletterpagenum` Section 9.9.1, Figure 3, of the CESRM shows an example “Table of Contents” that
`\@setpostletterpagenum` begins on page i. We will take this as the correct example.

```
325 \newcommand{\@setletterpagenum}{}
326 \newcommand{\@setpostletterpagenum}{\setcounter{page}{0}}
```

Section 9.8.5 of the CESRM [2] states that the “Table of Contents” must start on page ii, contradicting Section 9.9.1 above. However, this does not take into account letters of submittal that are longer than one page. The following code is commented out as it makes no sense to follow this requirement.

```
327 %\newcommand{\@setletterpagenum}{}
328 %\newcommand{\@setpostletterpagenum}{\setcounter{page}{1}}
```

Section 3.1 of the Math guidelines [3] state that the title page is page i and the “Table of Contents” is page ii, because the letter of submittal is an insert, and not part of the report.

```
329 \ifthenelse{\boolean{uwwrpt@math}}{%
330   \renewcommand{\@setletterpagenum}{\setcounter{page}{1}}
331   \renewcommand{\@setpostletterpagenum}{}
332 }{}
```

Section 2 of the E&CE [4] and SE [5] guidelines require that the submittal letter be page ii. The “Table of Contents” then follow in logical order, after any preliminary sections.

```
333 \ifthenelse{\boolean{uwwrpt@ece} \or \boolean{uwwrpt@se}}{%
334   \renewcommand{\@setletterpagenum}{\setcounter{page}{2}}
335   \renewcommand{\@setpostletterpagenum}{}
336 }{}
```

4.9.1 Table of contents

In L^AT_EX, the default name for a “Table of Contents” section is “Contents”. This is changed to follow Section 9.9.1 of the CESRM [2].

```
337 \renewcommand{\contentsname}{Table of Contents}
```

`\tableofcontents` The table should be single-spaced, as `\parskip` should give adequate spacing between items.

```
338 \let\tableofcontents@rig\tableofcontents
339 \renewcommand{\tableofcontents}{%
340   \clearpage
341   \begin{singlesspacing}
```

```

342 \setlength{\parskip}{0pt}
343 \tableofcontents@rig\par
344 \end{singlespacing}
345 }

```

Between the heading of each section, and the right-justified page numbers, there should be dotted tab leaders to lead the eye across the table. By default, sections did not have this behaviour, although subsections did. The following code makes it apply to all.

```

346 \renewcommand*\l@section[2]{%
347   \ifnum \c@tocdepth >\m@ne
348     \addpenalty{-\@highpenalty}%
349     \vskip 1.0em \@plus\p@
350     \setlength\@tempdima{1.5em}%
351     \begingroup
352       \parindent \z@ \rightskip \@pnumwidth
353       \parfillskip -\@pnumwidth
354       \leavevmode \bfseries
355       \advance\leftskip\@tempdima
356       \hskip -\leftskip
357       #1\nobreak\
358       \leaders\hbox{$\m@th
359         \mkern \@dotsep mu\hbox{.}\mkern \@dotsep
360         mu$}\hfil\nobreak\hb@xt@\@pnumwidth{\hss #2}\par
361       \penalty\@highpenalty
362     \endgroup
363   \fi%
364 }

```

4.9.2 Lists of stuff

`\listoffigures@intoc` The “List of Figures” and “List of Tables” should not be mentioned in the Tables
`\listoftables@intoc` of Contents, according to Section 9.9.1 of the CESRM [2]. This is the default
behaviour for L^AT_EX.

```

365 \newcommand{\listoffigures@intoc}{\relax}
366 \newcommand{\listoftables@intoc}{\relax}

```

However, Section 2 of the E&CE [4] and the SE [5] guidelines state that they must be listed. So we add the “List of Figures” and “List of Tables” to the “Table of Contents”.

```

367 \ifthenelse{\boolean{uwkrpt@ece} \or \boolean{uwkrpt@se}}{%
368   \renewcommand{\listoffigures@intoc}{%
369     \addcontentsline{toc}{section}{List of Figures}}
370   \renewcommand{\listoftables@intoc}{%
371     \addcontentsline{toc}{section}{List of Tables}}
372 }{}

```

`\listoffigures` We ensure that the “List of Figures” is on a separate page and single-spaced. The spacing provided by `\parskip` is sufficient. Also included is `\listoffigures@intoc`

to respect the settings above.

```

373 \let\listoffigures@rig\listoffigures
374 \renewcommand{\listoffigures}{%
375   \clearpage
376   \begin{singlespacing}
377   \listoffigures@rig \listoffigures@intoc%
378   \end{singlespacing}
379 }

```

`\listoftables` The “List of Tables” should behave exactly as the “List of Figures”.

```

380 \let\listoftables@rig\listoftables
381 \renewcommand{\listoftables}{%
382   \clearpage
383   \begin{singlespacing}
384   \listoftables@rig \listoftables@intoc%
385   \end{singlespacing}
386 }

```

4.10 Tables and figures

Save the original table and figure environments so that they can be overridden. Notice that the `\endtable` command is an implementation dependant part of L^AT_EX.

```

387 \let\table@rig\table
388 \let\endtable@rig\endtable
389 \let\figure@rig\figure
390 \let\endfigure@rig\endfigure

```

figure According to Section 9.9.3 of the CESRM [2], Figures and tables must be on their own page after they have been referenced in the text. The only way to guarantee this is to change the default *<loc>* argument in `\begin{table}[<loc>]` to `[p]`.

```

391 \renewenvironment{figure}[1][p]{\begin{figure@rig}[#1]}\end{figure@rig}}
392 \renewenvironment{table}[1][p]{\begin{table@rig}[#1]}\end{table@rig}}

```

According to Section 3.4 of the Math guidelines [3]; and Section 2 of the E&CE [4] and the SE [5] guidelines, figures and tables must appear after they are referenced in the text. The only way to guarantee this is to change the default *<loc>* argument to `[htbp]`. See Section 3.3.2 for more information.

```

393 \ifthenelse{\boolean{uwskrpt@ece}
394             \or \boolean{uwskrpt@math}
395             \or \boolean{uwskrpt@se}}{%
396   \renewenvironment{figure}[1][htbp]{\begin{figure@rig}[#1]}\end{figure@rig}}
397   \renewenvironment{table}[1][htbp]{\begin{table@rig}[#1]}\end{table@rig}}
398 }{}

```

4.11 References

Every paper needs a “References” section. Section 9.9.5 of the CESRM [2] does not set any bibliography style. Section 2 of the E&CE [4] and the SE [5] guidelines

require the use of the IEEE Computer Society style [7]. The Math guidelines [3] appear to specify a style similar to the IEEE's.

The IEEE Transactions bibliography style is almost identical to that of the IEEE Computer Society style. An implementation of this ships with almost every L^AT_EX installation, so we will call that instead. The only difference is that @ELECTRONIC{} does not exist as a type of citation, but this can be emulated with @MISC{}.

```
399 \bibliographystyle{ieeetr}
```

In the future, I may consider adding support for the more recent IEEE Transactions style, but only after it ships with the major T_EX distributions. As well, I would consider using any styles that the IEEE Computer Society implement.

`\bibliography` Add the References section to the Table of Contents. As well, make it single spaced.

```
400 \let\bib@rig\bibliography
401 \renewcommand{\bibliography}[1]{%
402   \clearpage
403   \begin{singlespacing}
404   \bibliography@intoc \bib@rig{#1}\par
405   \end{singlespacing}
406 }
```

`\bibliography@intoc` According to Section 9.9.1 of the CESRM [2], the References section is actually a section that comes before the Appendices.

```
407 \newcommand{\refn@me}{References}
408 \newcommand{\bibliography@intoc}{%
409   \renewcommand{\refname}{%
410     \addtocounter{section}{1}%
411     \arabic{section}\hspace{2.5ex}\refn@me%
412     \addcontentsline{toc}{section}{%
413       \numberline{\arabic{section}}{\refn@me}}}%
414 }
```

However the Math [3], E&CE [4], and SE [5] guidelines state that the `\bibliography{<file>}` should come after `\backmatter`, since it should not have a section number.

```
415 \ifthenelse{\boolean{uwwrpt@ece}
416             \or \boolean{uwwrpt@math}
417             \or \boolean{uwwrpt@se}}{%
418   \renewcommand{\bibliography@intoc}{%
419     \addcontentsline{toc}{section}{\refn@me}}%
420 }{}}
```

4.12 Legacy code

The following code is to retain compatibility with the old uw-ece-workreport document class. It merely provides a stub that calls uw-wkrpt with the [ece] option.

This document class will be depreciated in uw-wkrpt 3.0.

```

421 \ClassWarning{uw-ece-workreport}{%
422   The ‘uw-ece-workreport’ class is now ^^J%
423   deprecated. Use ‘\string\usepackage[ece]{uw-wkrpt}’ instead}
424 \DeclareOption*{\PassOptionsToClass {\CurrentOption}{uw-wkrpt}}
425 \ProcessOptions
426 \LoadClass[ece]{uw-wkrpt}
427 \newcommand{\UWECEWorkReportVersion}{2.0}

```

References

- [1] L. Lamport and D. Dobby (Illustrator), *LaTeX: a document preparation system*. Reading, MA: Addison-Wesley, second ed., 1994.
- [2] University of Waterloo, Co-operative education & career services, “Co-operative education student reference manual.” <http://www.cecs.uwaterloo.ca/manual/> (current 24 Apr. 2003.)
- [3] University of Waterloo, Math undergrad office, “Faculty of mathematics work report guidelines.” <http://www.math.uwaterloo.ca/navigation/Current/workreport/index.html> (current 26 Apr. 2003.)
- [4] W. M. Loucks PEng, G. H. Freeman, and J.A. Bary PEng, “E&CE work term report guidelines.” <http://www.ece.uwaterloo.ca/~wtrc/WrkTrmRpt.html> (current 24 Apr. 2003.)
- [5] M. Armstrong, J. Atlee, W. M. Loucks PEng, G. H. Freeman, and J.A. Bary PEng, “Software engineering work report guidelines” <http://www.softeng.uwaterloo.ca/Current/work.report.guidelines.htm> (current 24 Apr. 2003.)
- [6] W. M. Loucks PEng, “Confidential work term reports.” <http://www.pads.uwaterloo.ca/Wayne.Loucks/Service/confidential/page1.html> (current 26 Apr. 2003.)
- [7] IEEE Computer Society Press, “CS Style Guide: References” <http://www.computer.org/author/style/refer.htm> (current 1 Nov. 2001.)

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Change History

v1.0	Smarter page number suppression. 31
General: First public release of uw-ece-workreport. 18	<code>\maketitle</code> : Fixed <code>\thanks</code> command. 31
v1.1	<code>\title</code> : L ^A T _E X 2 _ε style definitions. 28
General: Minor bug fixes. 18	v2.1
v2.0	General: Set a standard paragraph skip. 28
General: Enforce 12 pt. type. . . . 27	v2.2
First <code>docstrip</code> release. 18	General: Set top and bottom margins to 1 inch. 28
Renamed the class to <code>uw-wkprt</code> . 18	<code>letter</code> : Keep the signature block together. 33
Select between different programs' guidelines. 27	v2.3
Set margins correctly. 28	<code>\@secdotzerostart</code> : Numbered sections end in “.0” in Math. . 34
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<code>\author</code> : L ^A T _E X 2 _ε style definitions. 29	<code>\backmatter</code> : Numbered sections
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New options for letter formats. 32	

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