The uccthesis \LaTeX\ 2e document class*

Typesetting a UCC thesis with \LaTeX

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Summary

This is a \LaTeX\ document class for typesetting theses at University College Cork, according to the layout rules specified by the Registrar, Academic Council, and the Graduate Studies Office.

These rules (especially the naming of degrees and the disciplines within which they are granted) are subject to change from time to time, so before using this software, please check http://research.ucc.ie/latex/ to see if there is an updated version.

This is a late draft for testing. All users at this stage are regarded as testers, and should report any difficulties with the software or the documentation in the first instance to epu@ucc.ie.

You need a copy of the \LaTeX\ software and a suitable editor on your computer in order to use this document class. If you are new to \LaTeX, please ensure that you read the documentation referred to in http://research.ucc.ie/latex/ before starting.

*This document corresponds to uccthesis v. 1.19β, dated 2014/05/30.
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To struggling authors everywhere
Acknowledgements

My thanks go to all the people who have kept me supplied with solutions to formatting problems which I have been able to incorporate into this package.

Thank you also to the inhabitants of the comp.text.tex Usenet newsgroup for answering questions, and for their work in writing and maintaining all the packages on which this class depends.

Most of all, thanks to the patient students of UCC who waited for me to finish this.
What’s new?

The Change History on page 172 which lists the stages of development, and the Index lists every \TeX\ and \LaTeX\ command used in the class. Technically-minded authors might want to examine the commented listing in section 9 on page 47: there is much to be gained from understanding how something works.

From version 0.95 this class is distributed in the standard DTX format. Please read the installation instructions in section 1 on page 13.

Main differences from \LaTeX’s default classes

• You MUST start by declaring the document class uccthesis instead of article, book, or report (details on page 17)

• You MUST use at least two options in your document class declaration: one for your discipline and one for your degree (details on page 17)

• You MUST specify your Supervisor[s] and Professor (Head of School or Department) using the special commands provided in section 2.2 on page 18. (You give your title, author, and date in the normal way.)

• The Table of Contents, List of Figures (if used), List of Tables (if used), and Declaration are all automated: you SHOULD NOT include commands for these yourself (see section 3 on page 26)

• There are new environments for your Acknowledgements, Dedication, and any preliminary explanatory sections, if you need them, before your first Part or Chapter (see section 3.1 on page 26)

• There is an optional Epigraph (cited quotation) which you can use immediately after a chapter title (see ‘epigraph’, the first item in the list in section 3.2.5 on page 30)

• The Quotation environment now has an optional argument for a Bib\TeX\ citation key (see ‘quotation’, the second item in the list in section 3.2.5 on page 30)

• The default format is draft-mode, 1\frac{1}{2}-line-spaced, unjustified text, no indentation, and a line-space between paragraphs. These defaults (except draft mode) were set to maximise readability, but can be changed via class options: see the list in section 2.3 on page 23

• Some 30 or so packages are preloaded (according to the options you choose for the document class): see Table 11 on page 42. You
SHOULD NOT re-specify any of these if they have already been loaded
Introduction to \LaTeX

\LaTeX{} is a document preparation system for the \TeX{} typesetting program. It is designed to automate all the tedious and repetitive tasks of preparing a document, freeing authors to concentrate on their writing.

While it can also be used for almost any typesetting task, it is ideal for long or complex documents (the two are not necessarily synonymous), especially for documents with a well-defined structure such as books, articles, journals, theses, reports, white papers, and manuals.

Although it originally came from the disciplines of mathematics and computing science, it is nowadays equally at home in the Humanities, thanks to the enormous range of add-ons or plug-ins (‘document classes’ and ‘packages’), and the extensive range of typefaces, which extend the basic typesetting capabilities into hundreds of specialist areas and formatting requirements.

What You Got Is What You Gave Me

\LaTeX{} is a typesetter, not a wordprocessor. It has no graphical interface of its own — instead, you can choose one of many \LaTeX{} editors available, or use your own favourite plaintext editor.

\LaTeX{} works by formatting your text according to how you have labelled it. If you label some text as a section title, that is how it will be formatted. If you mislabel it, \LaTeX{} cannot guess how you really wanted it: you have to tell it.

Documentation and training

If you haven’t used \LaTeX{} before, you should read the online beginners’ guide, \textit{Formatting Information} (Flynn, 2011) from \url{http://latex.silmaril.ie/formattinginformation/}, and install the latest version of the software from the \TeX{} Collection DVD issued by the \TeX{} Users Group (\url{http://www.tug.org/}). UCC is a TUG member and the DVD can be obtained from the Computer Centre Electronic Publishing Unit. The software is free in both senses: free of restrictions (it can be copied and given away); and also free of charge.

- Unix and GNU/Linux users do not normally need the DVD: the software can be installed online as \texttt{texlive-full} from each distribution’s own archive or Software Centre (eg \texttt{yum}, \texttt{rpm}, \texttt{apt}, \texttt{apt-get}).
Synaptic, etc). A choice of editors and viewers is available the same way.

- Apple Mac users should use the DVD or download the latest MacTeX.mpkg.zip from http://tug.org/mactex/ (about 1.5Gb);
- Windows users should use the DVD and select the ProTEXt distribution. Details of how to do this are in Formatting Information (Flynn, 2011).

The Training Centre holds occasional 1-day beginners’ courses in LaTEX: contact tcentre@ucc.ie for details.

LaTeX support (questions about LaTeX itself, not about the uccthesis document class)

TeX and LaTeX are strongly supported by millions of users worldwide, and by the teams of developers organised around the TeX Users Group and other users groups around the world.

There are therefore lots of places you can ask or search for help, depending on how common or rare your query is. Before you post a question on a web site or mailing list or newsgroup, make sure you are providing enough information for people to understand what you are trying to do. Best of all, have a minimal example that you can upload, that demonstrates what you want, or how what you are trying doesn’t work.

1. The TeX FAQ maintained by the UK TeX Users Group on behalf of the worldwide TeX community at http://www.tex.ac.uk/faq — always try here first, to make sure you’re not asking something that a million people before you have asked

2. The UCC LaTeX mailing list tex-users@lists.ucc.ie — this is open to all: those who go on the 1-day course are automatically added; anyone can join at http://lists.ucc.ie/tex-users.html

3. The island-wide public mailing list italic-l@listserv.heanet.ie for the Irish TeX And LaTeX In-print Community at http://listserv.heanet.ie/italic-l.html

4. The Usenet newsgroup comp.text.tex (ask your ISP for access, or use the Google Groups interface). This is the principal technical forum, monitored by the designers and developers. High-volume (which is why it’s a newsgroup, not a web site or mailing list), but full of information

5. A native Google Group called latexusersgroup@gmail.com
6. Hundreds of web sites, led by the excellent tex.stackexchange.com, whose searchable archive and votable answers make it heavily used

7. Online and on paper: TUGboat, the quarterly journal of the TeX Users Group. Reference copies are available in UCC; email latex@ucc.ie or check the index at http://tug.org/tugboat/.

8. Dozens of languages and cultures have TeX users groups for communication, development of their own typefaces and resources: see the list at http://tug.org/usergroups.html
Terminology

\TeX{} and \LaTeX{} terminology and appearances used in this document are highlighted in the following ways:

- The names of class options and package options are shown in \textbf{\textit{bold monospace type}}; 
  Example: \texttt{phd} 
  Class options are the ones you use in the \texttt{\documentclass} (first) line of your document; package options are the ones you use in \texttt{\usepackage} commands in your Preamble. Class and package options always go in [square brackets] between the command and the curly brace of the argument.

- The names of document classes and packages are shown in \textit{sans-serif type}; 
  Example: \texttt{xcolor}; 

- The names of \LaTeX{} commands are in \textit{monospace type}; 
  Example: \texttt{\appendix}; 

- Where it is important to demonstrate the arguments that a command may take, they are shown mnemonically in angled brackets; this means you must replace them with meaningful values of your own: 
  Examples: \texttt{\prelim\{\textit{title}\}}, \texttt{\project\{\textit{option}\}\{\textit{name}\}};

- The names of environments are in \textit{monospace type}; 
  Example: \texttt{dedication}.

Commands and environments are also shown in the margin, if specially relevant, and can be found in the Index.

The keywords \textbf{MUST}, \textbf{MUST NOT}, \textbf{REQUIRED}, \textbf{SHALL}, \textbf{SHALL NOT}, \textbf{SHOULD}, \textbf{SHOULD NOT}, \textbf{RECOMMENDED}, \textbf{MAY}, and \textbf{OPTIONAL} have a specific meaning when shown in \textbf{THIS TYPESTYLE}, following the specification in RFC 2119 (Bradner, 1997).
1 Installation

Please note

As of June 2012 these instructions have changed. This class is now distributed as a TDS-conformant zip file.

Please remove any earlier copy you may have been using, because the subfolders have changed.

You MUST have a full \LaTeX{} system installed before you can use this document class. \LaTeX{} is a part of every full \TeX{} installation. Please see the details on page 9. For further information and a copy of the installation DVD, contact the Electronic Publishing Unit. \TeX{} is also available online at http://www.tug.org/interest.html#free or from the \TeX{} Users Group or a local user group.

For personal use, this class MUST be installed in the same way as any add-on \LaTeX{} package or document class: in your personal \TeX{} folder as described in section 1.1 on the following page, not, repeat NOT in the main or local \TeX{} folders used by your \TeX{} system installation.

If this is the first time you have installed a package or class like this, or if you haven’t yet set up your personal \TeX{} folder, see section 1.1 on the next page first.

Installation on shared (multiuser) systems is different: see the instructions for systems administrators in section 1.2 on page 15.

Instructions for personal users

1. Download the uccthesis document class zip file from the link in http://research.ucc.ie/latex/. This is only accessible from UCC IP addresses

2. Unzip the uccthesis-n.nn.tds.zip file directly into your personal \TeX{} folder.

3. Users of MiKTeX on Windows MUST update the FNDB after installation (see the list ‘Updating the FileName DataBase’ in section 1.1.2 on page 15), otherwise \LaTeX{} will not find the new files.

UCC users must also download and install the ucccrest from http://research.ucc.ie/latex/#uccclasses (section 2.4.1). This is only
accessible from UCC IP addresses, as the crest is restricted to UCC students. You unzip this file into your personal \TeX{} folder in the same way as for the document class above.

### 1.1 Your personal \TeX{} folder

If you don’t have a personal \TeX{} folder yet, create one now. The place for your personal \TeX{} folder is different on Apple Mac, Linux, and Windows systems:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Location of your personal \TeX{} folder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple Macintosh OS X</td>
<td>~/Library/texmf</td>
</tr>
<tr>
<td>Unix and GNU/Linux</td>
<td>~/texmf</td>
</tr>
<tr>
<td>Microsoft Windows</td>
<td></td>
</tr>
<tr>
<td>• 95/98/XP/2003</td>
<td>C:\texmf</td>
</tr>
<tr>
<td>• 2007/2010 and up</td>
<td>Computer\System\Users\your name\texmf</td>
</tr>
</tbody>
</table>

If this folder does not already exist on your computer, create it now.

#### 1.1.1 Unix, GNU/Linux, and Apple Macintosh OS X

You do not need to run `texhash` or `mktexlsr` after installing software into your personal \TeX{} folder (indeed, you should not do so).

#### 1.1.2 MiKTeX on Windows

For users of MiKTeX on Windows, there is an additional task after you create your personal \TeX{} folder:

1. Run the MiKTeX Settings program by clicking on the `Start` | Programs or `Windows` | Programs button, and then click on `MiKTeX x.y` | Maintenance | Settings;
2. Click on the `Roots` tab;
3. Click the `Add` button;
4. Navigate to your new `texmf` folder;
5. Click `OK`.

On subsequent occasions (when you install software or updates manually) you must update the FileName DataBase (FNDB):
Updating the FileName DataBase

1. Run the MiKTeX Settings program as before;
2. In the [Main] tab, click the [Refresh FNDB] button.

You MUST do this after installing or updating software in your personal TeX folder, otherwise MiKTeX won’t find anything.

1.2 Installation on a shared (multiuser) computer

If you need to install the files on a shared (multiuser) system, you need to be root (Administrator). If you are not, ask your local systems administrator to do it for you.

1. Identify where the local shared TeX directory is. This is conventionally something like /usr/local/share/texmf/ or /usr/local/texlive/2012/../texmf-local but you can find out by typing the command:

   kpsewhich -expand-var '$TEXMFLOCAL';

2. Unzip the uccthesis-n.nn.tds.zip and the ucccrest.zip files into this folder;
3. Run the TeX index program texhash (some systems call this mktexlsr) to update the fast-find (ls-R) database. Until you do this, your LaTeX users will not be able to find the files.

These instructions are for Unix-based systems, including GNU/Linux and Apple Macintosh OS X. If someone would like to provide me the equivalents for shared Windows systems I would be pleased to include them.

1.3 Manual installation

This is only for older or non-TDS-conformant systems. Do not use this method on modern systems.

1. Download and unzip the uccthesis-n.nn.tds.zip file into a temporary directory (eg /tmp), without preserving all the paths: use the \(-j\) option to unzip to do this

2. Run pdflatex on uccthesis.ins. This will re-extract the uccthesis.cls file (so the program will ask you if you want to overwrite it: answer yes by typing \(y\) and pressing the Return or Enter key)
3. Move or copy the files into a location where your installation of \TeX will find them. This varies from distribution to distribution: it is sometimes known as ‘the \texttt{TEXINPUTS} directory’, but it is \textit{your responsibility} to know where this is.

4. Repeat the procedure for the \texttt{ucccrest.zip} file.

5. Run the \TeX index program \texttt{texhash} (some systems call this \texttt{mktexlsr}) to update the fast-find (\texttt{ls-R}) database. Until you do this, your \LaTeX users will not be able to find the files.

### 1.4 Testing the installation

The file \texttt{thesis-example.tex} (one-sided) is provided as an example to test the document class with.

Move this file into your Documents folder (or somewhere else you keep documents) and open it with your \LaTeX editor and click \texttt{Typeset} or \texttt{pdf\LaTeX} to typeset it. This should create a file \texttt{thesis-example.pdf} that you can open in your PDF reader or viewer.

MiK\TeX users please note you CANNOT do this in your personal \TeX folder or any of its subfolders, as MiK\TeX will not run \LaTeX in those folders. You must move the document to somewhere else to process it.
2 Author’s Guide — How to set up your thesis

The first line of your thesis document MUST say

```latex
\documentclass[options]{uccthesis}
```

where `options` is a list of options separated by commas. Two options are compulsory (see section 2.1):

1. one option for specifying your discipline or affiliation, taken from the tables in section 4 on page 33;
2. one option for specifying your class of degree, taken from the tables in section 5 on page 37.

In addition, you can also use any of the other options explained in section 2.3 on page 23 that you find relevant.

Apart from the title page (see section 2.2 on the following page) and a few additional structures (see section 3.2.5 on page 29), the remainder of your document SHOULD use standard \LaTeX commands, environments, and packages which you can find explained in *Formatting Information* (Flynn, 2011) or any book or web site on how to use \LaTeX.

2.1 Selecting your discipline and class of degree

1. You MUST select one of the options for your College, Faculty, School, Department, or discipline from the first column in the lists in Table 2 to Table 6 on pages 33–36.
2. You MUST select one of the options for the class of degree for which you are submitting from the first column in the lists in Table 7 to Table 10 on pages 37–40.

These options automatically use the official names of the disciplines and degrees granted by UCC: you cannot make up your own. The two options are mutually exclusive within their respective lists: you can only use one of each. Consult your supervisor if you are unsure.

The disciplines and degrees change from time to time, and are updated in this class when they become known. Older names and codes are kept (but undocumented) so that your thesis will remain processable as long as \LaTeX is around (nearly 30 years so far, and going strong).
2.2 Setting up your title page

The title page of your thesis follows the rules set down by the Registrar’s Office and the Graduate Studies Office. This package does the formatting automatically if you provide the right information.

You will have already given your class of degree and your discipline or affiliation in the \documentclass options described in section 2.1 on the previous page.

You MUST provide the following (see Figure 1 on the next page for an example):

1. Your thesis title;
2. Your full name;
3. The date of submission;
4. The name[s] of your Supervisor[s];
5. The name of your Professor or Head of Department, School, or Discipline.

These are done with standard \LaTeX \texttt{title}, \texttt{author}, and \texttt{date} commands, plus two additional commands which are compulsory: \texttt{supervisor} and \texttt{professor}.

The \texttt{title} command has an optional argument where you can supply a short title for use in running headers and footers, eg¹

\begin{verbatim}
\title[Nucleotide sequence of mitochondrial maxicircle DNA]{The nucleotide sequence of a 3.2 kb segment of mitochondrial maxicircle DNA from \textit{Crithidia fasciculata} containing the gene for cytochrome oxidase subunit III, the N-terminal part of the apocytochrome \textit{b} gene and a possible frameshift gene}
\subtitle{Further evidence for the use of unusual initiator triplets in trypanosome mitochondria}
\end{verbatim}

You MAY also provide any of the following:

6. Your existing postgraduate or professional qualifications, if relevant and permitted (see section 2.2.2 on the following page);
7. A subtitle for your thesis (see section 2.2.3 on page 21);
8. The volume number and total number of volumes² (see section 2.2.4 on page 21);
9. Your Institute, Research Centre, Unit, or Hospital, if appropriate (see section 2.2.5 on page 21);

¹http://nar.oxfordjournals.org/content/15/1/51.abstract
²This is compulsory if there is more than one volume to your thesis.
10. The name of your sponsor or funding organisation or person, if relevant (see section 2.2.6 on page 22).

The title block commands MAY occur in any order, but they MUST be terminated in the normal way with the \maketitle command. See the example in Figure 1 and the output in Figure 2 on the following page.

2.2.1 Professor and Supervisor

Give the name of your Professor (or Head of College, School, Department, or Discipline) with the command \professor. Give the name of your Supervisor with the command \supervisor (but see the note below). These commands are compulsory.

\professor{Dr F Händel}
\supervisor{Dr PDQ Bach}
\supervisors{Dr WA Mozart\Mr L van Beethoven}

If you have more than one Supervisor, use the command \supervisors (plural) instead, and separate their names with a double backslash (\).

2.2.2 Qualifications

If you have prior postgraduate qualifications or membership of relevant professional bodies, you can specify them with the \qualifications command.
Title goes here

With a subtitle if necessary

George Boole
MSC
10101010101

NATIONAL UNIVERSITY OF IRELAND, CORK

SCHOOL OF MATHEMATICAL SCIENCES
DEPARTMENT OF MATHEMATICS

Thesis submitted for the degree of
Doctor of Philosophy

August 2013

Head of Department: Prof AN Other
Supervisors: Dr One Supervisor
Dr Other Supervisor

Research supported by Some Company
Always use lowercase for qualifications, as they will be typeset in small capitals (which are the lowercase equivalent of all-caps). A space is better than a comma for separating qualifications, as in the example above.

2.2.3 Subtitle

If your thesis has a subtitle, use the \subtitle command: you MUST NOT embed the subtitle in the \title with a colon.

2.2.4 Multi-volume theses

If your thesis runs to two or more volumes, you MUST specify this with the \volume command. This has a special format:

\volume n of m

where \( n \) and \( m \) are the number of the volume and the total number of volumes respectively, for example \volume 3 of 5

2.2.5 Subsidiary affiliations

In addition to the College, Faculty, School, or Department in which you conducted your research, you MAY also specify your Institute, Research Centre (Group), Unit, or Hospital with the commands \institute, \centre, \unit, and \hospital.

These four commands automatically add the suffix ‘Institute’, ‘Centre’, ‘Unit’, or ‘Hospital’ respectively, so you MUST not include it in the curly braces. For example:

\institute{Tyndall National}
\centre{Macrobiotic Research}
\unit{Linguistic Synthesis}
\hospital{Mercy University}

In some special circumstances this can be circumvented, where the syntax of the name requires it. Details are in section 2.2.7 on the following page.
2.2.6 Sponsorship

Where your research has been sponsored by an external organisation, you MAY be required under the terms of your contract to add their name. Use the `\sponsor` command to do this, for example:

```
\sponsor{Silmaril Consultants}
```

2.2.7 Modifying the format of affiliations

Need may occasionally arise for the inclusion of variant forms of names of the affiliations `\institute`, `\hospital`, `\centre`, and `\unit`. These commands therefore all have an optional argument which can be used for three purposes:

**Specifying a full name:** Supplying the square brackets but *without* a value (i.e., the optional argument is present but null), will suppress the automatic prefix or suffix that is otherwise added to the name, letting you specify a name that does not fit the conventional pattern, for example:

```
\institute[]{Institute for Advanced Studies}
\centre[]{Centre of Excellence in Executive Education}
\unit[]{Isolation Unit for Nervous Diseases}
```

**Specifying an acronym:** Where an Institute, Hospital, Centre, or Unit (only) is normally known by an acronym, this can be given in the optional argument, and the name given in full in the main argument (no prefix or suffix will be added); for example:

```
\institute[IMI]{Irish Management Institute}
\hospital[CUH]{Cork University Hospital}
\centre[APC]{Alimentary Pharmabiotic Centre}
\unit[HFRG]{Human Factors Research Group}
```

This method will print the full name followed by the acronym in parentheses. Note that this only works with the `\institute`, `\hospital`, `\centre`, and `\unit` commands.

**Specifying an alternative prefix:** Where a School or Department name requires a different prefix from ‘School of’ or ‘Department of’, this can be given in the optional argument, for example:

```
\school[Summer School in]{Irish Studies}
\department[Roinn an]{Ontolaoiachta}
```

This method will print the full name preceded by the new prefix, and is useful for the Irish forms of names pending the integration of an
Table 1: Summary of title block commands

<table>
<thead>
<tr>
<th>\command{...}</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>\title{...}</td>
<td>Title of your thesis</td>
</tr>
<tr>
<td>\author{...}</td>
<td>Your name</td>
</tr>
<tr>
<td>\date{...}</td>
<td>Date of submission</td>
</tr>
<tr>
<td>\professor{...}</td>
<td>Name of your Professor or Head of Department</td>
</tr>
<tr>
<td>\supervisor{...}</td>
<td>Supervisor’s name[s]. With the plural form, separate the names with <code>\</code></td>
</tr>
<tr>
<td>\maketitle</td>
<td>Finishes the title block: must come last</td>
</tr>
<tr>
<td>\subtitle{...}</td>
<td>Subtitle</td>
</tr>
<tr>
<td>\qualifications{...}</td>
<td>Your existing qualifications</td>
</tr>
<tr>
<td>\institute[...][...]</td>
<td>Your institute, hospital, centre, or unit, if relevant (section 2.2.5 on page 21 for details)</td>
</tr>
<tr>
<td>\hospital[...][...]</td>
<td></td>
</tr>
<tr>
<td>\centre[...][...]</td>
<td></td>
</tr>
<tr>
<td>\unit[...][...]</td>
<td></td>
</tr>
<tr>
<td>$\texttt{vol n of m}$</td>
<td>For multi-volume theses</td>
</tr>
<tr>
<td>\sponsor{...}</td>
<td>Sponsor or funding agency name, if relevant</td>
</tr>
</tbody>
</table>

| Pre-specified       |                                                                 |
| \school{...}       | Not normally used: these are automatically specified by using the relevant class options (see section 2.1 on page 17) |
| \department{...}   |                                                                     |
| \degree{...}       |                                                                     |

Irish-language option for titling. Note that this only works with the \school and \department commands.

2.2.8 Specifying your degree manually

In very rare circumstances you may need to specify your degree manually. Details are in the commented code in section 9 on page 47, and the usage may be examined in the .dtx and .cls files.

2.3 Additional class options

There are some additional options that can be specified in the \documentclass command at the start of the document. These are all optional: use them if you need them.
**cjk**: As indicated in a footnote to Table 3 on page 34, this option loads the CJK package for typesetting Chinese, Japanese, and Korean. You MUST ensure that you have suitable fonts installed (eg wadalab for Japanese: consult with the local users group for the relevant language or culture — there is a list of these at http://www.tug.org/lugs). The CJK environment can then be used for blocks of text, and the `\cjktext` command can be used for words and short phrases.

The babel package enables culture-specific typesetting options, including hyphenation, and SHOULD be used in any document where another language is used for more than the odd word or phrase. Read the package documentation for more information.

Because it is not possible to know which of the many language[s] provided you need to use, you MUST add them as options to the babel package yourself, in your Preamble, with the main language of the document as the last option, eg

```latex
\documentclass[msc,zeps,cjk]{uccthesis}
\usepackage[japanese,english]{babel}
```

**draft**: Draft mode is the default: this allows a draft to be printed with a frame replacing the images, saving toner or ink, and speeding up the printout. It also highlights hyphenation and justification problems like overlong lines and unbreakable words with a black rectangle in the right margin.

In draft mode, the running head shows the current section on the left and the current subsection on the right. The running foot shows the name of the file on the left and the date and time on the right.

**final**: Final mode prints all images and removes the black rectangles (it doesn’t solve the hyphenation and justification problems: you have to fix those yourself).

In final mode, the running head is the same as in draft mode, but the running foot shows the title of the thesis on the left and the author’s name on the right.

**gaeilge**: This option does for Irish what the cjk option does for CJK languages: it loads the Irish-language options for a thesis written in Irish, and adds the eiad package for typesetting with a réim-chtó typeface (you will still need to install the eiad font package yourself, if it is not already on your computer). Unlike cjk, however, the gaeilge option does preload the babel package, with [english,irish] as the options.

**nolot**: Disables the automatic List of Tables.
nolof: Disables the automatic List of Figures.

justified: Text in this document class is set *unjustified* (ragged right margin) by default. This option turns justification back on. See section 3.2.1 on page 28. This option does *not* restore indentation and remove paragraph-spacing: use the *indented* option for that.

indented: Text in this document class is set *unindented* by default. This option turns indentation back on. See section 3.2.1 on page 28. This option does *not* restore justification: use the *justified* option for that.

termpaper: This is an experimental option for typesetting term papers. Feedback on useful features would be welcomed.

essay: This is an experimental option for typesetting undergraduate essays. Feedback on useful features would be welcomed.

wp: This is an experimental option for making the document look as if it was done with a word processor. This may be useful for drafts if your supervisor is accustomed to seeing theses done with systems such as *OpenOffice, Libre Office*, or Microsoft *Word*.

plainheaders: This disables the automated running headers described in section 3.2.2 on page 28 and reverts to *LATEX*’s defaults.
3 Document structure

After the title page, which is created by the `\maketitle` command at the end of the title block, the UCC rules specify that there must be a Table of Contents, followed by the formal statement that this research is your own work. Both of these are inserted automatically: you do not need to add anything.

If you have used tables or figures, a List of Tables and List of Figures will also be printed automatically after the Table of Contents. If you have only a very small number of tables or figures, you can disable the List of Tables or List of Figures independently with the `nolot` and `nolof` class options (see ‘nolot’, the fifth item in the list in section 2.3 on page 24).

Addition in 1.11: self-controlled lists or tables of ancillary matter

For glossaries, lists of symbols or acronyms, and similar terminological lists, you SHOULD use the relevant packages, and include the `\ListOf...` command (provided by the package) after the `\maketitle` and before the preliminaries.

If you create these lists by hand, you MUST include them in the same place using the starred form of the preliminaries command `\prelim*`. This is necessary to avoid the Declaration being triggered prematurely.

3.1 Preliminaries (front matter)

Before the text begins, there are usually some preliminary sections together referred to as ‘front matter’ or ‘prelims’. This class provides the following environments and commands for these:

- **dedication**: The `dedication` environment is for you to add a dedication.

  ```latex
  \begin{dedication}
  ...
  \end{dedication}
  ```

- **acknowledgements**: The `acknowledgements` environment is for you to add your acknowledgements.

  ```latex
  \begin{acknowledgements}
  ...
  \end{acknowledgements}
  ```
abstract: This is the normal \LaTeX\ abstract environment except that the heading starts a new page and is in the same format as all the other preliminary sections.

\begin{abstract}
...
\end{abstract}

The UCC thesis rules state that an Abstract must be limited to 300 words.

\prelim: The \texttt{\prelim\{⟨title⟩\}} command is available for starting any other preliminary sections you may need, such as explanations of terminology or lists of equipment. It works exactly like an unnumbered section heading, but it starts a new page, and is included in the Table of Contents (see the example on page 12).

There is a special starred form of this command, \texttt{\prelim*} which can be used before any of the above commands or environments to create preliminary sections that do not trigger the Declaration prematurely. Use with caution!

\begin{center}
\textbf{Declaration}
\end{center}

The UCC Declaration (that this is your own work) is automatically inserted by the \textit{first use} of any of the following:

\begin{itemize}
\item a \texttt{dedication} environment;
\item an \texttt{acknowledgements} environment;
\item a \texttt{\prelim without} the star;
\item a \texttt{\part};
\item a \texttt{\chapter}.
\end{itemize}

The \texttt{\prelim*} command can be used to add material \textit{before} these without triggering the Declaration.

\subsection{Text body (main matter)}

For the body of your text, a thesis is usually divided into chapters, containing sections and subsections (and perhaps subsubsections). For a very long thesis you may use the standard \LaTeX\ \texttt{\part} command to divide the chapters into parts.
Some changes, listed below, have been made to the default appearance to improve readability and consistency.

### 3.2.1 Size, spacing, justification, indentation, and paragraph spacing

The default typesetting in this class is

- 11pt type;
- 1½ line spacing;
- unjustified (ragged-right margin);
- no indentation;
- white-space between paragraphs.

This makes it easier for your supervisor and Extern to read, and avoids most problems with hyphenation and justification, which are more frequent in technical and academic work because of the high incidence of specialist terms.

Unless you are very skilled at typographic production, it is probably better not to try to typeset a thesis as if it were a book for publication.

However, there are two class options available if you want to return to the book-style with indented paragraphs and no space between them:

- **justified**: this option sets the text justified. It does not affect the indentation or the space between paragraphs.
- **indented**: this option indents paragraphs and removes the space between paragraphs. It does not affect justification.

Be aware that justified text in the rather long lines used in theses makes your work harder to read.

### 3.2.2 Running headers and footers

Running headers and footers are printed on all pages except chapter openings. This is so that photocopies or page-extracts of your thesis will show what it is and who wrote it; otherwise the eventual reader of a fragment would not know whose work it was. Details of what appears in draft and final mode are in ‘draft’, the second item in the list in section 2.3 on page 24.

If you want the original (LaTeX) default of page number at the bottom, you can use the **plainheaders** class option, and you can then use LaTeX’s own
headings commands.

### 3.2.3 Page numbering

The title page is not numbered (internally it is numbered zero).

All the preliminary pages from the Table of Contents up to (but not including) the first page of the first Part or Chapter are numbered in lowercase Roman numerals.

All remaining pages are numbered in Arabic numerals, starting at 1 for the first page of the first Part or Chapter.

You should use the standard \texttt{\LaTeX} \texttt{\label} and \texttt{\pageref} commands for making cross-references to pages. For more complex cross-referencing, use the varioref package.

### 3.2.4 Typefaces and fonts

The default typeface is Computer Modern (based on Monotype Series 8), using the updated version from the \texttt{lmodern} package. The default boldface font has been changed to normal bold from bold extended, but you can still use the \texttt{\textbf} and \texttt{\bfseries} commands normally.

The default type size is 11pt, but the \texttt{12pt} option can be used if you need larger type. The 10pt option is not recommended, as it makes the lines harder to read.

You MAY use additional font or typeface packages, but you MUST NOT use display (decorative) fonts for the text of a thesis.

### 3.2.5 Structure

The basic structure is handled by the standard \texttt{\LaTeX} commands \texttt{\part}, \texttt{\chapter}, \texttt{\section}, \texttt{\subsection}, and \texttt{\subsubsection}.

\LaTeX{} also provides the commands \texttt{\paragraph} and \texttt{\subparagraph} for numbered, headed paragraphs and subparagraphs, but you should avoid them if possible because they make it harder for your readers (your Professor and your External Examiner).

Within the sectional divisions, separate your paragraphs by a blank line in the normal way. All the standard \texttt{\LaTeX} environments can be used for tables and figures, lists, quotations, equations, theorems, etc.
A few small changes have been made to the formatting and features of the following environments:

**epigraph**: The epigraph\{\citekey\} environment is a specialised format of short quotation that comes immediately after a chapter or section title. It typesets the contents centred and italicised, with the source cited underneath, right-aligned. The one (compulsory) argument SHOULD contain a Bib\TeX{} citation key for the source of the quotation. (This is the same principle as for the quotation environment described in ‘quotation’, the second item in the list in section 3.2.5, except that this argument in epigraph is compulsory, so it goes in curly braces.)

However, if you want an indirect citation to your epigraph, as at the start of this section, you MAY put it in an optional argument in square brackets, and leave the normal argument empty:
\begin{epigraph}{GBS, writing in 1940}{}

**quotation**: There is a new, optional, argument to the quotation\{\citekey\} environment which is for the Bib\TeX{} citation key of the source, eg
\begin{quotation}{shaw}.

When used, the quotation is followed by a right-aligned short-form citation. The quotation is set in the \small type size and the first line is not indented.

The argument is optional because quotations may also be cited indirectly in the preceding or following text, and may therefore not always need direct citation.

If you need to give a page number or other qualifier to such a reference (as the page range in the example above), which would usually go in square brackets before a normal \cite command, you MUST embed the whole thing in curly braces inside the optional argument, otherwise \LaTeX{} will not be able to distinguish the square brackets of the citation modifier from those which surround the argument. For example: \begin{quotation}{[[pp.80--81]{shaw}]}\end{quotation}

**table and figure**: The standard parameters in \LaTeX{} for the proportions of a page which can be occupied by tables and figures are too small for theses, which typically have many floats. In this class, they have been increased to the value suggested in the \TeX{} FAQ at http://www.tex.ac.uk/cgi-bin/texfaq2html?label=floats; and additionally, the overall proportion of the page that can be occupied by floats has been increased from 66\% to 75\%. See the detailed code description at section 9.10.1 on page 129 for the exact values used.
3.3 Back matter

The final sections are your Appendices, References, and possibly an Index or Glossary.

3.3.1 Appendices

Appendices are done in the standard way, using the \appendix command to signal the change from chapters to appendices, and continuing to use the \chapter command to create the appendix headings.

3.3.2 References (Bibliography)

Until the new biblatex package is fully implemented, you should continue to use BibTeX for your references and citations. The correct package[s] and styles for citation in your discipline are pre-loaded on the basis of the package option for your College, Faculty, School, or Department that you selected in the \documentclass line. The format which is pre-loaded is listed in the final column of Table 2 to Table 6 on pages 33–36. You should read the documentation on the reference style package used, because many of them provide useful and time-saving commands for citing your references correctly.

To get your References section printed, you MUST give the \bibliography{⟨bibdbname⟩} command at the place where you want the references printed (usually near the end of your thesis). The argument is the name of your BibTeX database file, without the .bib on the end, eg \bibliography{myrefs}

Citation and Reference formats

In the current version, not all Schools and Departments have provided information on their preferred format. These have been set to a default by guesswork, usually the Kluwer variant of Harvard.

If you have concrete information about the preferred format for your discipline, please let me know.

Peter Flynn
pflynn@ucc.ie

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The pre-loaded formats were specified by staff in your College, Faculty, School, or Department, and are presumed to be correct. If you have been asked to use a different format (for example, by your Extern, or because you are doing multidisciplinary research), you should add the special command \resetbibstyle{⟨stylename⟩} to your Preamble, followed by the name of the alternate BibTeX style name without the .bst on the end.3

3.3.3 Indexes and Glossaries

If you need to produce an Index or Glossary, you can use the normal LaTeX commands and procedures.

For Glossaries, note that you MUST use the glossaries package (the old glossary package has been superseded).

---

3One reason for varying the style is that the popular American Psychological Association (apacite) style affixes an author's initials to citations where there is more than one author by the same name; and some Externs may require this to be elided. There is a web page describing the problem, and providing a solution at http://tex.stackexchange.com/questions/18954/apacite-suppress-initials-intext, but it involves hand-editing a BibTeX style file. To avoid this, a copy of the suggested file bpacite.bst is available for download at http://epu.ucc.ie/latex/ (put it in ~/texmf/bibtex/bst/) and then use the command \resetbibstyle{bpacite} in your Preamble.
## 4 Options for college, department, and school affiliation

**Table 2:** Class options for the College of Science, Engineering and Food Science

<table>
<thead>
<tr>
<th>Option</th>
<th>School / Department / Institute</th>
<th>Reference Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>appmaths</td>
<td>Department of Applied Mathematics</td>
<td>Default</td>
</tr>
<tr>
<td>bees</td>
<td>School of Biological, Earth and Environmental Sciences</td>
<td>Oxford</td>
</tr>
<tr>
<td>chem</td>
<td>Faculty of Science; Department of Chemistry</td>
<td>ACS</td>
</tr>
<tr>
<td>chemeng</td>
<td>Department of Process and Chemical Engineering</td>
<td>Harvard</td>
</tr>
<tr>
<td>civil</td>
<td>School of Engineering; Department of Civil and Environmental Engineering</td>
<td>Harvard</td>
</tr>
<tr>
<td>cs</td>
<td>Faculty of Science; Department of Computer Science</td>
<td>Default</td>
</tr>
<tr>
<td>elec</td>
<td>School of Engineering; Department of Electrical and Electronic Engineering</td>
<td>Harvard</td>
</tr>
<tr>
<td>engineering</td>
<td>School of Engineering</td>
<td>Harvard</td>
</tr>
<tr>
<td>food</td>
<td>School of Food and Nutritional Sciences</td>
<td>Default</td>
</tr>
<tr>
<td>foodbus</td>
<td>School of Food and Nutritional Sciences; Department of Food Business and Development</td>
<td>Harvard</td>
</tr>
<tr>
<td>geol</td>
<td>Faculty of Science; Department of Geology</td>
<td>Default</td>
</tr>
<tr>
<td>maths</td>
<td>School of Mathematical Sciences; Department of Mathematics</td>
<td>Default</td>
</tr>
<tr>
<td>microbio</td>
<td>Department of Microbiology</td>
<td>Default</td>
</tr>
<tr>
<td>microelec</td>
<td>School of Engineering; Department of Microelectronic Engineering</td>
<td>Harvard</td>
</tr>
<tr>
<td>physics</td>
<td>Faculty of Science; Department of Physics</td>
<td>Transactions of the IEEE</td>
</tr>
<tr>
<td>physio</td>
<td>Department of Physiology</td>
<td>Vancouver</td>
</tr>
<tr>
<td>scifac</td>
<td>Faculty of Science</td>
<td>Default</td>
</tr>
<tr>
<td>stats</td>
<td>Department of Statistics</td>
<td>Harvard</td>
</tr>
<tr>
<td>zeps</td>
<td>School of Zoology, Ecology and Plant Science</td>
<td>Oxford</td>
</tr>
</tbody>
</table>
Table 3: Class options for the College of Arts, Celtic Studies and Social Sciences

<table>
<thead>
<tr>
<th>Option</th>
<th>School / Department / Institute</th>
<th>Reference Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>apsoc</td>
<td>School of Applied Social Studies</td>
<td>Harvard</td>
</tr>
<tr>
<td>appsych</td>
<td>School of Applied Psychology</td>
<td>APA</td>
</tr>
<tr>
<td>arch</td>
<td>Department of Archaeology</td>
<td>Harvard</td>
</tr>
<tr>
<td>arthist</td>
<td>School of History; Department of History of Art</td>
<td>Oxford</td>
</tr>
<tr>
<td>asian</td>
<td>School of Asian Studies</td>
<td>Harvard</td>
</tr>
<tr>
<td>bealoideas</td>
<td>Béaloideas / Folklore</td>
<td>Harvard</td>
</tr>
<tr>
<td>classics</td>
<td>Department of Classics</td>
<td>Oxford</td>
</tr>
<tr>
<td>educ</td>
<td>School of Education</td>
<td>Harvard</td>
</tr>
<tr>
<td>emi</td>
<td>Department of Early and Medieval Irish</td>
<td>Harvard</td>
</tr>
<tr>
<td>eng</td>
<td>School of English</td>
<td>Harvard</td>
</tr>
<tr>
<td>folketh</td>
<td>Department of Folklore and Ethnology</td>
<td>Harvard</td>
</tr>
<tr>
<td>french</td>
<td>School of Languages, Literatures and Cultures; Department of French</td>
<td>Harvard</td>
</tr>
<tr>
<td>geog</td>
<td>Department of Geography</td>
<td>Harvard</td>
</tr>
<tr>
<td>german</td>
<td>School of Languages, Literatures and Cultures; Department of German</td>
<td>MLA</td>
</tr>
<tr>
<td>hisp</td>
<td>School of Languages, Literatures and Cultures; Department of Hispanic Studies</td>
<td>Harvard</td>
</tr>
<tr>
<td>hist</td>
<td>School of History</td>
<td>Harvard</td>
</tr>
<tr>
<td>italian</td>
<td>School of Languages, Literatures and Cultures; Department of Italian</td>
<td>Harvard</td>
</tr>
<tr>
<td>llc</td>
<td>School of Languages, Literatures and Cultures</td>
<td>Harvard</td>
</tr>
<tr>
<td>lnag</td>
<td>School of Scoil Léann na Gaeilge / School of Irish Learning</td>
<td>Harvard</td>
</tr>
<tr>
<td>modirish</td>
<td>Department of Modern Irish</td>
<td>Harvard</td>
</tr>
<tr>
<td>music</td>
<td>School of Music and Theatre; Department of Music</td>
<td>Harvard</td>
</tr>
<tr>
<td>nuag</td>
<td>Department of Nua-Ghaeilge</td>
<td>Harvard</td>
</tr>
<tr>
<td>phil</td>
<td>Department of Philosophy</td>
<td>Harvard</td>
</tr>
<tr>
<td>planning</td>
<td>School of Geography and Archaeology: The Human Environment</td>
<td>Harvard</td>
</tr>
<tr>
<td>politics</td>
<td>Department of Politics</td>
<td>Harvard</td>
</tr>
<tr>
<td>relig</td>
<td>Department of Study of Religions</td>
<td>Harvard</td>
</tr>
<tr>
<td>smg</td>
<td>Department of Sean- agus Meán-Ghaeilge</td>
<td>Harvard</td>
</tr>
<tr>
<td>socio</td>
<td>Department of Sociology</td>
<td>Harvard</td>
</tr>
<tr>
<td>sociophil</td>
<td>School of Sociology and Philosophy</td>
<td>Harvard</td>
</tr>
<tr>
<td>theatre</td>
<td>School of Music and Theatre; Department of Drama and Theatre Studies</td>
<td>Harvard</td>
</tr>
</tbody>
</table>

a) The asian option preloads the CJK package (Chinese/Japanese/Korean)
b) The lnag option may require the gaeilge option
<table>
<thead>
<tr>
<th>Option</th>
<th>School / Department / Institute</th>
<th>Reference Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>anat</td>
<td>Department of Anatomy</td>
<td>Vancouver</td>
</tr>
<tr>
<td>biochem</td>
<td>Department of Biochemistry</td>
<td>Vancouver</td>
</tr>
<tr>
<td>clinther</td>
<td>School of Clinical Therapies</td>
<td>Harvard</td>
</tr>
<tr>
<td>cuh</td>
<td>Hospital Cork University</td>
<td>Vancouver</td>
</tr>
<tr>
<td>denthosp</td>
<td>University Dental School and Hospital</td>
<td>Vancouver</td>
</tr>
<tr>
<td>dentrest</td>
<td>University Dental School and Hospital; School of Dental Hygiene; Department of Restorative Dentistry</td>
<td>Vancouver</td>
</tr>
<tr>
<td>dentsurg</td>
<td>University Dental School and Hospital; Department of Dental Surgery</td>
<td>Vancouver</td>
</tr>
<tr>
<td>epipub</td>
<td>School of Medicine; Department of Epidemiology and Public Health</td>
<td>Vancouver</td>
</tr>
<tr>
<td>gp</td>
<td>School of Medicine; Department of General Practice</td>
<td>Vancouver</td>
</tr>
<tr>
<td>hearing</td>
<td>School of Clinical Therapies; Department of Speech and Hearing Sciences</td>
<td>APA</td>
</tr>
<tr>
<td>life</td>
<td>School of Life Sciences</td>
<td>Harvard</td>
</tr>
<tr>
<td>medicine</td>
<td>School of Medicine; Department of Medicine</td>
<td>Vancouver</td>
</tr>
<tr>
<td>medsch</td>
<td>School of Medicine</td>
<td>Vancouver</td>
</tr>
<tr>
<td>mercy</td>
<td>Hospital Mercy University</td>
<td>Vancouver</td>
</tr>
<tr>
<td>midwifery</td>
<td>School of Nursing and Midwifery</td>
<td>Harvard</td>
</tr>
<tr>
<td>nursing</td>
<td>School of Nursing and Midwifery</td>
<td>Harvard</td>
</tr>
<tr>
<td>obsgyn</td>
<td>School of Medicine; Department of Obstetrics and Gynaecology</td>
<td>Vancouver</td>
</tr>
<tr>
<td>occther</td>
<td>School of Clinical Therapies; Department of Occupational Therapy</td>
<td>Harvard</td>
</tr>
<tr>
<td>oralhealth</td>
<td>University Dental School and Hospital; Department of Oral Health and Development</td>
<td>Vancouver</td>
</tr>
<tr>
<td>path</td>
<td>School of Medicine; Department of Pathology</td>
<td>Vancouver</td>
</tr>
<tr>
<td>pch</td>
<td>School of Medicine; Department of Paediatrics and Child Health</td>
<td>Vancouver</td>
</tr>
<tr>
<td>pharm</td>
<td>School of Pharmacy</td>
<td>Harvard</td>
</tr>
<tr>
<td>pharmthera</td>
<td>School of Medicine; Department of Pharmacology and Therapeutics</td>
<td>Vancouver</td>
</tr>
<tr>
<td>physio</td>
<td>Department of Physiology</td>
<td>Vancouver</td>
</tr>
<tr>
<td>psychiatry</td>
<td>School of Medicine; Department of Psychiatry</td>
<td>Vancouver</td>
</tr>
<tr>
<td>radio</td>
<td>School of Medicine; Department of Radiology</td>
<td>Harvard</td>
</tr>
<tr>
<td>speech</td>
<td>School of Clinical Therapies; Department of Speech and Hearing Sciences</td>
<td>APA</td>
</tr>
<tr>
<td>surg</td>
<td>School of Medicine; Department of Surgery</td>
<td>Vancouver</td>
</tr>
</tbody>
</table>
Table 5: Class options for the College of Business and Law

<table>
<thead>
<tr>
<th>Option</th>
<th>School / Department / Institute</th>
<th>Reference Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>afis</td>
<td>Faculty of Commerce; Department of Accounting and Finance</td>
<td>Harvard</td>
</tr>
<tr>
<td>bis</td>
<td>Faculty of Commerce; Department of Business Information Systems</td>
<td>Harvard</td>
</tr>
<tr>
<td>commerce</td>
<td>Faculty of Commerce</td>
<td>Harvard</td>
</tr>
<tr>
<td>coop</td>
<td>Faculty of Commerce; Centre for Co-operative Studies</td>
<td>Harvard</td>
</tr>
<tr>
<td>cps</td>
<td>Faculty of Commerce; Centre for Policy Studies</td>
<td>Harvard</td>
</tr>
<tr>
<td>econ</td>
<td>Faculty of Commerce; Department of Economics</td>
<td>Harvard</td>
</tr>
<tr>
<td>foodbus</td>
<td>School of Food and Nutritional Sciences; Department of Food Business and Development</td>
<td>Harvard</td>
</tr>
<tr>
<td>govt</td>
<td>Faculty of Commerce; Department of Government</td>
<td>Harvard</td>
</tr>
<tr>
<td>law</td>
<td>Faculty of Law</td>
<td>Legal</td>
</tr>
<tr>
<td>mgt</td>
<td>Faculty of Commerce; Department of Management and Marketing</td>
<td>Harvard</td>
</tr>
<tr>
<td>mktg</td>
<td>Faculty of Commerce; Department of Management and Marketing</td>
<td>Harvard</td>
</tr>
<tr>
<td>stats</td>
<td>Department of Statistics</td>
<td>Harvard</td>
</tr>
</tbody>
</table>

a) The mktg option is an alternative for mgt

Table 6: Class options for selecting Institutes

<table>
<thead>
<tr>
<th>Option</th>
<th>School / Department / Institute</th>
<th>Reference Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>imi</td>
<td>Irish Management Institute</td>
<td>Harvard</td>
</tr>
<tr>
<td>tyndall</td>
<td>Tyndall National Institute</td>
<td>Alpha</td>
</tr>
</tbody>
</table>
5 Options for class of degree

Table 7: Degree options for the College of Arts, Celtic Studies and Social Sciences

<table>
<thead>
<tr>
<th>Option</th>
<th>Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>dlitt</td>
<td>Doctor of Literature</td>
</tr>
<tr>
<td>dlittcelt</td>
<td>Doctor of Celtic Literature</td>
</tr>
<tr>
<td>dmus</td>
<td>Doctor of Music</td>
</tr>
<tr>
<td>dsocsci</td>
<td>Doctor of Social Science</td>
</tr>
<tr>
<td>ma</td>
<td>Master of Arts</td>
</tr>
<tr>
<td>mbsasian</td>
<td>Master of Business Systems (Asian Business)</td>
</tr>
<tr>
<td>med</td>
<td>Master of Education</td>
</tr>
<tr>
<td>mphil</td>
<td>Master of Philosophy</td>
</tr>
<tr>
<td>mplan</td>
<td>Master of Planning and Sustainable Development</td>
</tr>
<tr>
<td>msocsc</td>
<td>Master of Social Science</td>
</tr>
<tr>
<td>msw</td>
<td>Master of Social Work</td>
</tr>
<tr>
<td>phd</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>phded</td>
<td>Doctor of Philosophy in Education — Structured</td>
</tr>
<tr>
<td>phdss</td>
<td>Doctor of Philosophy in Social Sciences</td>
</tr>
<tr>
<td>phdtcc</td>
<td>Doctor of Philosophy in Texts, Contexts and Cultures</td>
</tr>
</tbody>
</table>
## Table 8: Degree options for the College of Medicine and Health

<table>
<thead>
<tr>
<th>Option</th>
<th>Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>dclindent</td>
<td>Doctor of Clinical Dentistry</td>
</tr>
<tr>
<td>dmed</td>
<td>Doctor of Medicine</td>
</tr>
<tr>
<td>dnp</td>
<td>Doctor of Nursing Practice</td>
</tr>
<tr>
<td>docct</td>
<td>Doctor of Occupational Therapy</td>
</tr>
<tr>
<td>mao</td>
<td>Master of Obstetrics</td>
</tr>
<tr>
<td>mch</td>
<td>Master of Surgery</td>
</tr>
<tr>
<td>md</td>
<td>Doctor of Medicine</td>
</tr>
<tr>
<td>mdph</td>
<td>Master in Dental Public Health</td>
</tr>
<tr>
<td>mds</td>
<td>Master of Dental Science</td>
</tr>
<tr>
<td>mmmedsc</td>
<td>Master in Sport and Exercise Medicine</td>
</tr>
<tr>
<td>mph</td>
<td>Master in Public Health</td>
</tr>
<tr>
<td>msccep</td>
<td>Master of Science (Evidence-Based Therapy Practice)</td>
</tr>
<tr>
<td>msdm</td>
<td>Master of Science (Midwifery)</td>
</tr>
<tr>
<td>mscog</td>
<td>Master of Science (Obstetrics and Gynaecology)</td>
</tr>
<tr>
<td>mscobh</td>
<td>Master of Science (Occupational Health)</td>
</tr>
<tr>
<td>msccpqs</td>
<td>Master of Science (Pharmaceutical Technology and Quality Systems)</td>
</tr>
<tr>
<td>phd</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>phdcb</td>
<td>Doctor of Philosophy in Cancer Biology</td>
</tr>
<tr>
<td>phdhsr</td>
<td>Doctor of Philosophy in Health Services Research</td>
</tr>
<tr>
<td>Option</td>
<td>Degree</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>dbe</td>
<td>Doctor of Business Economics</td>
</tr>
<tr>
<td>deconsc</td>
<td>Doctor of Economic Science</td>
</tr>
<tr>
<td>lld</td>
<td>Doctor of Law</td>
</tr>
<tr>
<td>llm</td>
<td>Master of Law</td>
</tr>
<tr>
<td>llmcj</td>
<td>Master of Law (Criminal Justice)</td>
</tr>
<tr>
<td>llme</td>
<td>Master of Law (e-Law)</td>
</tr>
<tr>
<td>llmp</td>
<td>Master of Law (Practitioner)</td>
</tr>
<tr>
<td>mba</td>
<td>Master of Business Administration</td>
</tr>
<tr>
<td>mbs</td>
<td>Master of Business Systems</td>
</tr>
<tr>
<td>mbsasian</td>
<td>Master of Business Systems (Asian Business)</td>
</tr>
<tr>
<td>mbsbe</td>
<td>Master of Business Systems (Business Economics)</td>
</tr>
<tr>
<td>mbsbis</td>
<td>Master of Business Systems (Business Information Systems)</td>
</tr>
<tr>
<td>mbsbp</td>
<td>Master of Business Systems (Economics of Business Practice)</td>
</tr>
<tr>
<td>mbscse</td>
<td>Master of Business Systems (Co-operative and Social Enterprise)</td>
</tr>
<tr>
<td>mbseb</td>
<td>Master of Business Systems (Electronic Business)</td>
</tr>
<tr>
<td>mbsfm</td>
<td>Master of Business Systems (Food Marketing)</td>
</tr>
<tr>
<td>mbsg</td>
<td>Master of Business Systems (Government)</td>
</tr>
<tr>
<td>mbsm</td>
<td>Master of Business Systems (Health Services Management)</td>
</tr>
<tr>
<td>mbsieb</td>
<td>Master of Business Systems (Innovation in European Business)</td>
</tr>
<tr>
<td>mbsippp</td>
<td>Master of Business Systems (International Public Policy and Diplomacy)</td>
</tr>
<tr>
<td>mbsisbp</td>
<td>Master of Business Systems (Information Systems for Business Performance)</td>
</tr>
<tr>
<td>mbsmimas</td>
<td>Master of Business Systems (Management Information and Managerial Accounting Systems)</td>
</tr>
<tr>
<td>mbssmm</td>
<td>Master of Business Systems (Management and Marketing)</td>
</tr>
<tr>
<td>mcom</td>
<td>Master of Commerce</td>
</tr>
<tr>
<td>mcommbb</td>
<td>Master of Commerce (Supply Chain Management — Lean SCM Black Belt)</td>
</tr>
<tr>
<td>mcommbe</td>
<td>Master of Commerce (Business Economics)</td>
</tr>
<tr>
<td>mcommpgp</td>
<td>Master of Commerce (Government and Public Policy)</td>
</tr>
<tr>
<td>mcommscm</td>
<td>Master of Commerce (Supply Chain Management)</td>
</tr>
<tr>
<td>meonsc</td>
<td>Master of Economic Science</td>
</tr>
<tr>
<td>mscf</td>
<td>Master of Science (Corporate Finance)</td>
</tr>
<tr>
<td>mscfe</td>
<td>Master of Science (Financial Economics)</td>
</tr>
<tr>
<td>mscbe</td>
<td>Master of Science (Health Economics)</td>
</tr>
<tr>
<td>phd</td>
<td>Doctor of Philosophy</td>
</tr>
<tr>
<td>phdbis</td>
<td>Doctor of Philosophy in Business Information Systems</td>
</tr>
</tbody>
</table>
Table 10: Degree options for the College of Science, Engineering and Food Science

<table>
<thead>
<tr>
<th>Option</th>
<th>Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>dsc</td>
<td>Doctor of Science</td>
</tr>
<tr>
<td>me</td>
<td>Master of Engineering</td>
</tr>
<tr>
<td>mengsc</td>
<td>Master of Engineering Science</td>
</tr>
<tr>
<td>mengscit</td>
<td>Master of Engineering Science (Information Technology in Architecture, Engineering and Construction)</td>
</tr>
<tr>
<td>mengscm</td>
<td>Master of Engineering Science (Microelectronics)</td>
</tr>
<tr>
<td>mengscmd</td>
<td>Master of Engineering Science (Microelectronic Design)</td>
</tr>
<tr>
<td>mengscme</td>
<td>Master of Engineering Science in Mechanical Engineering (Manufacturing, Process and Automation Systems)</td>
</tr>
<tr>
<td>mengscpbe</td>
<td>Master of Engineering Science (Pharmaceutical and Biopharmaceutical Engineering)</td>
</tr>
<tr>
<td>mengscse</td>
<td>Master of Engineering Science (Sustainable Energy)</td>
</tr>
<tr>
<td>mplan</td>
<td>Master of Planning and Sustainable Development</td>
</tr>
<tr>
<td>msc</td>
<td>Master of Science</td>
</tr>
<tr>
<td>mscac</td>
<td>Master of Applied Science (Analytical Chemistry)</td>
</tr>
<tr>
<td>msacapc</td>
<td>Master of Applied Science (Analysis of Pharmaceutical Compounds)</td>
</tr>
<tr>
<td>mscb</td>
<td>Master of Applied Science (Biotechnology)</td>
</tr>
<tr>
<td>mscbsb</td>
<td>Master of Applied Science (Bioinformatics with Systems Biology)</td>
</tr>
<tr>
<td>msccoop</td>
<td>Master of Science (Co-operative Organisation/Food Marketing/Rural Development)</td>
</tr>
<tr>
<td>msceaa</td>
<td>Master of Applied Science (Ecological Assessment)</td>
</tr>
<tr>
<td>msceac</td>
<td>Master of Applied Science (Environmental Analytical Chemistry)</td>
</tr>
<tr>
<td>msfbi</td>
<td>Master of Science (Food Business)</td>
</tr>
<tr>
<td>msfcm</td>
<td>Master of Applied Science (Food Microbiology)</td>
</tr>
<tr>
<td>msfs</td>
<td>Master of Applied Science (Food Science)</td>
</tr>
<tr>
<td>msfis</td>
<td>Master of Applied Science (Geographical Information Systems and Remote Sensing)</td>
</tr>
<tr>
<td>msfmb</td>
<td>Master of Applied Science (Marine Biology)</td>
</tr>
<tr>
<td>msfmnc</td>
<td>Master of Applied Science (Mathematical Modelling and Scientific Computing)</td>
</tr>
<tr>
<td>mscns</td>
<td>Master of Applied Science (Nutritional Sciences)</td>
</tr>
<tr>
<td>mscrd</td>
<td>Master of Science (Rural Development)</td>
</tr>
<tr>
<td>msccsmn</td>
<td>Master of Applied Science (Software and Systems for Mobile Networks)</td>
</tr>
<tr>
<td>msctm</td>
<td>Master of Science (Technology Management)</td>
</tr>
<tr>
<td>phd</td>
<td>Doctor of Philosophy</td>
</tr>
</tbody>
</table>
6 Packages preloaded

To make this document class work, several packages are preloaded. If your own work needs one of these, you MUST NOT use the \usepackage command for it, as it is already defined. These preloaded packages are listed in Table 11 on the next page.

Be aware that some packages may influence others. In particular, if you use the hyperref package that implements hyperlinks in PDF output, it MUST be loaded last, after all other packages.
Table 11: Standard packages preloaded

<table>
<thead>
<tr>
<th>Package</th>
<th>Options used</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJK</td>
<td>*</td>
<td>enables Chinese, Japanese, and Korean texts</td>
</tr>
<tr>
<td>array</td>
<td></td>
<td>allows paragraph formatting within table cells</td>
</tr>
<tr>
<td>calc</td>
<td></td>
<td>dimension arguments accepted in infix notation</td>
</tr>
<tr>
<td>ccaption</td>
<td></td>
<td>restyle captions (used to get \raggedright)</td>
</tr>
<tr>
<td>fancyhdr</td>
<td></td>
<td>adds running headers and footers</td>
</tr>
<tr>
<td>float</td>
<td></td>
<td>allows H ('here') position for non-floating floats</td>
</tr>
<tr>
<td>fontenc</td>
<td>T1</td>
<td>use the T1 font encoding for Unicode</td>
</tr>
<tr>
<td>footmisc</td>
<td></td>
<td>ensure footnotes stay at the bottom of short pages</td>
</tr>
<tr>
<td>geometry</td>
<td></td>
<td>set the margins (see section 9.6 on page 113)</td>
</tr>
<tr>
<td>graphicx</td>
<td></td>
<td>enable graphics</td>
</tr>
<tr>
<td>ifthen</td>
<td></td>
<td>used for if...then...else internally</td>
</tr>
<tr>
<td>inputenc</td>
<td>utf8x</td>
<td>specify UTF-8 (Unicode) to allow all languages</td>
</tr>
<tr>
<td>lmodern</td>
<td></td>
<td>extended Computer Modern (default) typeface</td>
</tr>
<tr>
<td>parskip</td>
<td></td>
<td>no indentation, paragraph gap is one line-space</td>
</tr>
<tr>
<td>setspace</td>
<td></td>
<td>set 1½ line-spacing</td>
</tr>
<tr>
<td>soul</td>
<td></td>
<td>enable letterspacing for title page</td>
</tr>
<tr>
<td>textcomp</td>
<td>†</td>
<td>support for special characters including \texteuro\ (€)</td>
</tr>
<tr>
<td>ucccrest</td>
<td>‡</td>
<td>UCC crest</td>
</tr>
<tr>
<td>ulem</td>
<td></td>
<td>Support for underlining</td>
</tr>
<tr>
<td>url</td>
<td></td>
<td>Improved line-breaking of long web addresses</td>
</tr>
<tr>
<td>xcolor</td>
<td></td>
<td>Colour</td>
</tr>
</tbody>
</table>

† Packages active only with the gaelge class option

| babel   | english, irish | Irish-language typesetting options |
| eiad    |               | \textsc{ean-clo\ } typeface |

‡ Packages active only with the wp class option

| pslatex | Times, Helvetica, and Courier only |
| ragged2e| hyphenation even in ragged right setting |

* Packages and BibTeX .bst files loaded for bibliographic support

| apacite | apacite |
| natbib  |        |
| har2nat | dcu, agsm, kluwer |
| jurabib | jurabib |
| mla     | chicago |
| oxford  | oxford_en |
|        | vancouver |

* only with the cjk class option
† support for the official € symbol requires the marvosym package (\EUR)
‡ you must ensure that the ucccrest package is installed if you work in UCC.
7 Thesis Regulations

These rules were taken from the Graduate Studies web site at http://www.ucc.ie/en/graduATESTudies/current/thesis/ on 24 March 2011.

7.1 Layout of Thesis

7.1.1 Title Page

There must be a title page which shall give the following information:

1. The full title\(^4\) of the thesis and the subtitle, if any.
2. The total number of volumes if more than one, and the number of the particular volume.
3. The full name of the author, followed, if desired, by any qualifications and distinctions.
4. The qualification for which the thesis is submitted.
5. The name of the institution to which the thesis is submitted — National University of Ireland, Cork.
6. The department, Faculty or organisation in which research was conducted.
7. The Month and Year of submission.
8. Name of the head of the department concerned.
9. Name of the supervisor of the research.

7.1.2 Table of Contents

The table of contents shall immediately follow the title page.

7.2 Style

The text must be either, printed, typewritten or otherwise reproduced on good quality size A4 paper, with a left-hand margin 4 cm. Double or one and a half spacing is recommended. Copies must be bound or otherwise

\(^4\)The title should describe the content of the thesis accurately and concisely.
securely fastened and numbered consecutively, page numbers to be located centrally at the bottom of the page.
References


8 Auto-initialisation

This section is added automatically by ClassPack as a preamble to all classes and packages. See the documentation to the fixltx2e package for details of why these have to be loaded before anything else.

fixltx2e Additional \LaTeX features omitted from the kernel for backward compatibility.

1 \RequirePackage{fixltx2e}

fix-cm Preloaded functions to overcome the default \LaTeX step-size font sizes (which can still be used, but are no longer restrictions).

2 \RequirePackage{fix-cm}

svgnames Pass the option svgnames to the hyperref package if that gets loaded later. This avoids a conflict with whatever hyperref’s own default is.

3 \PassOptionsToPackage{hyperref}{svgnames}
9 Implementation

The uccthesis document class is based on the standard \texttt{\LaTeX} report class, with additions to handle the title page and some extra formatting options, in particular the automation of selecting discipline (affiliation) and class of degree with the relevant Bib\TeX{} style.

9.1 Preliminary declarations

The \texttt{ifthen} package is required to make the options work.

\texttt{4\textbackslash RequirePackage\{ifthen\}}

9.2 Option management for affiliations and classes of degrees

The current design provides an option for every degree-granting discipline (aka College, Faculty, School, or Department); for identifying Institutes, Hospitals, Centres, and Units where relevant; and for every class of degree.\footnote{It would probably be better for a future version to use the \texttt{keyval} package to minimise the number of options declared.}

The data for the affiliations, disciplines, and degrees is held in a structure in the master XML document for this class, where it can be updated annually with changes as determined by UCC. All related options are then generated directly from this data.

9.2.1 Preliminary setup for affiliations and disciplines

To manage the specification of the options, for each division, we create three control sequences:
1. a ‘handle’ which acts as a way to standardise the prefix or suffix applied to each division;

2. a default value of \texttt{\relax} to enable recognition of the specified value of each division’s name;

3. a command to allow the assignment of each name.

Each command that identifies a division takes one optional argument and one compulsory argument: the compulsory argument is the value to assign, subject to the three rules:

1. if there is no optional argument, then the value is assigned with the declared handle prefixed or suffixed: \texttt{\centre\{Computer\} produces ‘Computer Centre’};

2. if the optional argument brackets are present but with no value supplied, the compulsory value is assigned \textit{without} the handle: \texttt{\centre[]\{Centre \textit{for Excellence in Design}\} produces ‘Centre \textit{for Excellence in Design}’};

3. if an optional argument is supplied, then its value is assigned as-is (no handle), and the compulsory argument is taken to be an acronym: \texttt{\centre\{Alimentary Pharmabiotic Centre\}\{APC\} produces ‘Alimentary Pharmabiotic Centre (APC)’}.

The last rule applies only to Institutes, Hospitals, Centres, and Units, where acronyms are common. For Schools and Departments, the third format currently ignores any specified optional argument.
UCC organisation

The UCC organisational model is currently non-functional. Colleges have not yet fully replaced Faculties, as was planned, but added to them; and Schools have likewise not replaced Departments. There is no longer a strict hierarchy, as some Schools and Departments belong to more than one College or Faculty, so there is no clear identity. Arguably some of the present Departments are really Disciplines, where the oversight role has been taken over by their School or Department.

\@schoolhandle The handles (prefixes/suffixes) all follow this pattern.

5 \def\@schoolhandle{School of}

\@unittype Define a value for school or department

6 \def\@unittype{\relax}

\@school Define the default-value macro for Schools. The others follow the same pattern.

7 \def\@school{\relax}

\school Define the user-level command to handle Schools.

8 \newcommand{\school}[2][\relax]{% If the optional argument is present but null, use the main argument as given.

9 \ifthenelse{\equal{#1}{} }% 10 {\gdef\@school{#2}% If the optional argument absent, prepend the handle to the main argument. In the case of Institutes, Hospitals, Centres, and Units below, the handle is appended instead.

11 {\if#1\relax\gdef\@school{\@schoolhandle \ #2}%
Otherwise (optional argument supplied) treat the optional argument as a replacement handle.

\else\gdef\@school{#1 #2}\%\fi\gdef\@unittype{School}\%
\%\n\@departmenthandle Departments...
\def\@departmenthandle{Department of}\n\@department

\def\@department{\relax}\n\newcommand{\department}[2][\relax]{\%\n  \ifthenelse{\equal{#1}{}}{\gdef\@department{#2}}{\%\n    \if#1\relax\gdef\@department{\@departmenthandle \ #2}\%\n    \else\gdef\@department{#1 #2}\fi\%\n  }\gdef\@unittype{Department}\%\n}\%\n\@institutehandle Institutes...
\def\@institutehandle{Institute}\n\@institute

\def\@institute{\relax}\n\newcommand{\institute}[2][\relax]{\%\n  \ifthenelse{\equal{#1}{}}{\gdef\@institute{#2}}{\%\n    \if#1\relax\gdef\@institute{\@institutehandle \ #2}\%\n    \else\gdef\@institute{#1 #2}\fi\%\n  }\gdef\@unittype{Institute}\%\n}\%
\@hospitalhandle Hospitals...

\hospital \def\@hospitalhandle{Hospital}

\hospital In this case the handle is appended, not prepended, and an optional argument is taken to be an acronym in parentheses.

\newcommand{\hospital}[2][\relax]{% 
  \ifthenelse{\equal{#1}{}}{\gdef\@hospital{#2}}{\if#1\relax 
    \gdef\@hospital{#2 \@hospitalhandle}\else\gdef\@hospital{#2 (#1)}\fi}}

\@centrehandle Centres...

\centre \def\@centrehandle{Centre}

\centre In this case the handle is appended, not prepended, and an optional argument is taken to be an acronym in parentheses.

\newcommand{\centre}[2][\relax]{% 
  \ifthenelse{\equal{#1}{}}{\gdef\@centre{#2}}{\if#1\relax 
    \gdef\@centre{#2 \@centrehandle}\else\gdef\@centre{#2 (#1)}\fi}}

\@unithandle Units...

\unithandle \def\@unithandle{Unit}

In this case the handle is appended, not prepended, and an optional argument is taken to be an acronym in parentheses.

\@usebib Before doing the actual divisional options, we create a command to record the bibliographic reference format that will be required for each College/Faculty/School/Department option. This holds the name of the .bst file appropriate for each discipline and [optional argument] the package name[s] needed to implement it. The bibliographic style is not issued directly, but uses the value of the \@userbibstyle command set by \@usebib. This allows the use of the \resetbibstyle user command to vary the bibliographic style from the default.

The fourth argument, which was unused, is now taken over by a flag which indicates if the related style packages need to be deferred until after the use of hyperref. This is currently the case for only one style apacite.

The \ifthenelse command should detect a fourth argument and use it to defer the package loading until the beginning of the document environment. Otherwise it can load at the end of the package.
The third argument holds the human-readable name of the bibliographic style, and the fourth argument is reserved to hold the command required for a full citation in a block quotation. These arguments are currently unused.

### 9.3 Divisional options

These are the class options for the various academic divisions within UCC. They are sorted alphabetically.

#### 9.3.1 ACSSS

**9.3.1.1 Applied Social Studies**

`apsoc` Applied Social Studies (school); using the Harvard citation format from the `kluwer.bst` BibTeX style with the natbib and
\texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
84 \DeclareOption{apsoc}{%
85   \school{Applied Social Studies}
86   \@usebib[natbib,har2nat]{kluwer}{Harvard}{}
87 }
\end{verbatim}

9.3.1.2 Applied Psychology

\texttt{apsych} Applied Psychology (school); using the APA citation format from the \texttt{apacite.bst} \LaTeX{} style with the \texttt{apacite} package (confirmed by pflynn@ucc.ie).

\begin{verbatim}
88 \DeclareOption{apsych}{%
89   \school{Applied Psychology}
90   \@usebib[apacite]{apacite}{APA}{}
91 }
\end{verbatim}

9.3.1.3 Archaeology

\texttt{arch} Archaeology (department); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
92 \DeclareOption{arch}{%
93   \department{Archaeology}
94   \@usebib[natbib,har2nat]{kluwer}{Harvard}{}
95 }
\end{verbatim}

9.3.1.4 History of Art

\texttt{arthist} History of Art (department) in History (school); using the Oxford citation format from the \texttt{oxford_en.bst} \LaTeX{} style with the \texttt{oxford} package (confirmed by F.Boggi@ucc.ie).

\begin{verbatim}
96 \DeclareOption{arthist}{%
97   \school{History}
98   \department{History of Art}
99   \@usebib[oxford]{oxford_en}{Oxford}{}
100 }
\end{verbatim}
9.3.1.5  Asian Studies

\textbf{asian}  Asian Studies (school); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
101 \DeclareOption{asian}{%
102 \school{Asian Studies}
103 \@usebib[natbib,har2nat]{kluwer}{Harvard}{}
104 }
\end{verbatim}

9.3.1.6  Béaloideas / Folklore

\textbf{bealoideas}  Béaloideas / Folklore (department); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
105 \DeclareOption{bealoideas}{%
106 \department[]{Béaloideas~/ Folklore}
107 \@usebib[natbib,har2nat]{kluwer}{Harvard}{}
108 }
\end{verbatim}

9.3.1.7  Classics

\textbf{classics}  Classics (department); using the Oxford citation format from the \texttt{oxford_en.bst} \LaTeX{} style with the \texttt{oxford} package (confirmed by D.Woods@ucc.ie).

\begin{verbatim}
109 \DeclareOption{classics}{%
110 \department{Classics}
111 \@usebib[oxford]{oxford_en}{Oxford}{}
112 }
\end{verbatim}

9.3.1.8  Education

\textbf{educ}  Education (school); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).
9.3.1.9 Early and Medieval Irish

`emi` Early and Medieval Irish (department); using the Harvard citation format from the `kluwer.bst` BibTeX style with the `natbib` and `har2nat` packages (unconfirmed).

9.3.1.10 English

`eng` English (school); using the Harvard citation format from the `kluwer.bst` BibTeX style with the `natbib` and `har2nat` packages (unconfirmed).

9.3.1.11 Folklore and Ethnology

`folketh` Folklore and Ethnology (department); using the Harvard citation format from the `kluwer.bst` BibTeX style with the `natbib` and `har2nat` packages (unconfirmed).
9.3.1.12 French

french French (department) in Languages, Literatures and Cultures (school); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
129 \DeclareOption{french}{%
130 \school{Languages, Literatures and Cultures}
131 \department{French}
132 \@usebib[natbib,har2nat]{kluwer}{Harvard}{} 
133 }%}
\end{verbatim}

9.3.1.13 Geography

geog Geography (department); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
134 \DeclareOption{geog}{%
135 \department{Geography}
136 \@usebib[natbib,har2nat]{kluwer}{Harvard}{} 
137 }%}
\end{verbatim}

9.3.1.14 German

german German (department) in Languages, Literatures and Cultures (school); using the MLA citation format from the \texttt{mlaa.bst} \LaTeX{} style with the \texttt{chicago} package (confirmed by G.Hofmann@ucc.ie).

\begin{verbatim}
138 \DeclareOption{german}{%
139 \school{Languages, Literatures and Cultures}
140 \department{German}
141 \@usebib[chicago]{mlaa}{MLA}{} 
142 }%}
\end{verbatim}

9.3.1.15 Hispanic Studies
9.3.1.16 History

9.3.1.17 Italian

9.3.1.18 Languages, Literatures and Cultures
11c Languages, Literatures and Cultures (school); using the Harvard citation format from the `kluwer.bst` BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{llc}{%
  \school{Languages, Literatures and Cultures}
  \@usebib[ natbib, har2nat]{ kluwer}{ Harvard}{ }
}

9.3.1.19 Scoil Léann na Gaeilge / School of Irish Learning

lnag Scoil Léann na Gaeilge / School of Irish Learning (school); using the Harvard citation format from the `kluwer.bst` BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{lnag}{%
  \school{Scoil Léann na Gaeilge~/ School of Irish Learning}
  \@usebib[ natbib, har2nat]{ kluwer}{ Harvard}{ }
}

9.3.1.20 Modern Irish

modirish Modern Irish (department); using the Harvard citation format from the `kluwer.bst` BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{modirish}{%
  \department{Modern Irish}
  \@usebib[ natbib, har2nat]{ kluwer}{ Harvard}{ }
}

9.3.1.21 Music

music Music (department) in Music and Theatre (school); using the Harvard citation format from the `kluwer.bst` BibTeX style with the natbib and har2nat packages (unconfirmed).
9.3.1.22 Nua-Ghaeilge

Nua-Ghaeilge (department); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.1.23 Philosophy

Philosophy (department); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.1.24 Geography and Archaeology: The Human Environment

Geography and Archaeology: The Human Environment (school); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).
9.3.1.25 Politics

Politics (department); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.1.26 Study of Religions

Study of Religions (department); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.1.27 Sean- agus Meán-Ghaeilge

Sean- agus Meán-Ghaeilge (department); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.1.28 Sociology

Sociology (department); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).
9.3.1.29 Sociology and Philosophy

Sociology and Philosophy (school); using the Harvard citation format from the \texttt{dcu.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (confirmed by a.szakolczai@ucc.ie).

9.3.1.30 Drama and Theatre Studies

Drama and Theatre Studies (department) in Music and Theatre (school); using the Harvard citation format from the \texttt{kluwer.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

9.3.2 BUSLAW

9.3.2.1 Accounting and Finance

Accounting and Finance (department) in Faculty of Commerce (school); using the Harvard citation format from the \texttt{apsr.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).
9.3.2.2 Business Information Systems

bis Business Information Systems (department) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst BibT\TeX\ style with the natbib and har2nat packages (unconfirmed).

9.3.2.3 Faculty of Commerce

commerce Faculty of Commerce (school); using the Harvard citation format from the kluwer.bst BibT\TeX\ style with the natbib and har2nat packages (unconfirmed).

9.3.2.4 Centre for Co-operative Studies

coop Centre for Co-operative Studies (centre) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst BibT\TeX\ style with the natbib and har2nat packages (unconfirmed).

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9.3.2.5 Centre for Policy Studies

cps Centre for Policy Studies (centre) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.2.6 Economics

econ Economics (department) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst BibTeX style with the natbib and har2nat packages (confirmed by niall.osullivan@ucc.ie).

9.3.2.7 Food Business and Development

foodbus Food Business and Development (department) in Food and Nutritional Sciences (school); using the Harvard citation format from the agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).
9.3.2.8 Government
govt Government (department) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst \textsc{BibTeX} style with the natbib and har2nat packages (unconfirmed).

\texttt{\DeclareOption{govt}{\school[](Faculty of Commerce)\department{Government}\@usebib[natbib,har2nat]{apsr}{Harvard}{}}}

9.3.2.9 Faculty of Law
law Faculty of Law (school); using the Legal citation format from the jurabib.bst \textsc{BibTeX} style with the jurabib package (confirmed by pflynn@ucc.ie).

\texttt{\DeclareOption{law}{\school[](Faculty of Law)\@usebib[jurabib]{jurabib}{Legal}{}}}

9.3.2.10 Management and Marketing
mgt Management and Marketing (department) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst \textsc{BibTeX} style with the natbib and har2nat packages (unconfirmed).

\texttt{\DeclareOption{mgt}{\school[](Faculty of Commerce)\department{Management and Marketing}\@usebib[natbib,har2nat]{apsr}{Harvard}{}}}

65
9.3.2.11 Management and Marketing

mktg Management and Marketing (department) in Faculty of Commerce (school); using the Harvard citation format from the apsr.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{mktg}{%  
  \school[]{Faculty of Commerce}  
  \department{Management and Marketing}  
  \@usebib[natbib,har2nat]{apsr}{Harvard}{}}

9.3.2.12 Statistics

stats Statistics (department); using the Harvard citation format from the apsr.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{stats}{%  
  \department{Statistics}  
  \@usebib[natbib,har2nat]{apsr}{Harvard}{}}

9.3.3 MED

9.3.3.1 Anatomy

anat Anatomy (department); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

\DeclareOption{anat}{%  
  \department{Anatomy}  
  \@usebib[vancouver]{Vancouver}{}
}
9.3.3.2 Biochemistry

biochem Biochemistry (department); using the Vancouver citation format from the vancouver.bst Bib\TeX style (confirmed by siun.oflynn@ucc.ie).

\DeclareOption{biochem}{
  \department{Biochemistry}
  \@usebib{vancouver}{Vancouver}{}
}

9.3.3.3 Clinical Therapies

clinther Clinical Therapies (school); using the Harvard citation format from the kluwer.bst Bib\TeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{clinther}{
  \school{Clinical Therapies}
  \@usebib[natbib,har2nat]{kluwer}{Harvard}{}
}

9.3.3.4 Cork University

cuh Cork University (hospital); using the Vancouver citation format from the vancouver.bst Bib\TeX style (unconfirmed).

\DeclareOption{cuh}{
  \hospital{Cork University}
  \@usebib{vancouver}{Vancouver}{}
}

9.3.3.5 University Dental School and Hospital
denthosp University Dental School and Hospital (hospital); using the Vancouver citation format from the vancouver.bst Bib\TeX style (confirmed by f.allen@ucc.ie).

\DeclareOption{denthosp}{
  \hospital[]{University Dental School and Hospital}
}
\@usebib{vancouver}{Vancouver}{}

9.3.3.6 Restorative Dentistry

dentrest  Restorative Dentistry (department) in Dental Hygiene (school) in University Dental School and Hospital (hospital); using the Vancouver citation format from the vancouver.bst BibTEX style (confirmed by f.allen@ucc.ie).

\DeclareOption{dentrest}{%
  \hospital[]{University Dental School and Hospital}
  \school{Dental Hygiene}
  \department{Restorative Dentistry}
  \@usebib{vancouver}{Vancouver}{}}

9.3.3.7 Dental Surgery

dentsurg  Dental Surgery (department) in University Dental School and Hospital (hospital); using the Vancouver citation format from the vancouver.bst BibTEX style (confirmed by f.allen@ucc.ie).

\DeclareOption{dentsurg}{%
  \hospital[]{University Dental School and Hospital}
  \school{Dental Hygiene}
  \department{Dental Surgery}
  \@usebib{vancouver}{Vancouver}{}}

9.3.3.8 Epidemiology and Public Health

epipub  Epidemiology and Public Health (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTEX style (confirmed by i.perry@ucc.ie).

\DeclareOption{epipub}{%
  \school{Medicine}
  \department{Epidemiology and Public Health}}
302 \@usebib{vancouver}{Vancouver}{}
303 }

9.3.3.9 General Practice

General Practice (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

304 \DeclareOption{gp}{%
305 \school{Medicine}
306 \department{General Practice}
307 \@usebib{vancouver}{Vancouver}{}
308 }

9.3.3.10 Speech and Hearing Sciences

Speech and Hearing Sciences (department) in Clinical Therapies (school); using the APA citation format from the apacite.bst BibTeX style with the apacite package (confirmed by F.Gibbon@ucc.ie).

309 \DeclareOption{hearing}{%
310 \school{Clinical Therapies}
311 \department{Speech and Hearing Sciences}
312 \@usebib{apacite}{apacite}{APA}{}
313 }

9.3.3.11 Life Sciences

Life Sciences (school); using the Harvard citation format from the agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

314 \DeclareOption{life}{%
315 \school{Life Sciences}
316 \@usebib{natbib,har2nat}{agsm}{Harvard}{}
317 )
9.3.3.12 Medicine
medsch    Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

```latex
318 \DeclareOption{medsch}{%
319   \school{Medicine}
320   \@usebib{vancouver}{Vancouver}{}
321 }
```

9.3.3.13 Medicine
medicine    Medicine (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

```latex
322 \DeclareOption{medicine}{%
323   \school{Medicine}
324   \department{Medicine}
325   \@usebib{vancouver}{Vancouver}{}
326 }
```

9.3.3.14 Mercy University
mercy    Mercy University (hospital); using the Vancouver citation format from the vancouver.bst BibTeX style (unconfirmed).

```latex
327 \DeclareOption{mercy}{%
328   \hospital{Mercy University}
329   \@usebib{vancouver}{Vancouver}{}
330 }
```

9.3.3.15 Nursing and Midwifery
midwifery    Nursing and Midwifery (school); using the Harvard citation format from the dcu.bst BibTeX style with the natbib and har2nat packages (confirmed by J.Hegarty@ucc.ie).

```latex
331 \DeclareOption{midwifery}{%
332   \school{Nursing and Midwifery}
333   \@usebib{harvard}{Harvard}{natbib,har2nat}
334 }
```
9.3.3.16 Nursing and Midwifery

Nursing and Midwifery (school); using the Harvard citation format from the dcu.bst \LaTeX{} style with the natbib and har2nat packages (confirmed by J.Hegarty@ucc.ie).

9.3.3.17 Obstetrics and Gynaecology

Obstetrics and Gynaecology (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst \LaTeX{} style (confirmed by siun.oflynn@ucc.ie).

9.3.3.18 Occupational Therapy

Occupational Therapy (department) in Clinical Therapies (school); using the Harvard citation format from the kluwer.bst \LaTeX{} style with the natbib and har2nat packages (unconfirmed).
9.3.3.19 Oral Health and Development

oralhealth Oral Health and Development (department) in University Dental School and Hospital (hospital); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by f.allen@ucc.ie).

\ DeclareOption{oralhealth}{%
   \ hospital[]\{University Dental School and Hospital\}
   \ department\{Oral Health and Development\}
   \@usebib{vancouver}{Vancouver}{}
\}

9.3.3.20 Pathology

path Pathology (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

\ DeclareOption{path}{%
   \ school\{Medicine\}
   \ department\{Pathology\}
   \@usebib{vancouver}{Vancouver}{}
\}

9.3.3.21 Paediatrics and Child Health

pch Paediatrics and Child Health (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

\ DeclareOption{pch}{%
   \ school\{Medicine\}
   \ department\{Paediatrics and Child Health\}
   \@usebib{vancouver}{Vancouver}{}
\}
9.3.3.22 Pharmacy

Pharmacy (school); using the Harvard citation format from the kluwer.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{pharm}{%
  \school{Pharmacy}
  \@usebib[natbib,har2nat]{kluwer}{Harvard}{}}

9.3.3.23 Pharmacology and Therapeutics

Pharmacology and Therapeutics (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

\DeclareOption{pharmthera}{%
  \school{Medicine}
  \department{Pharmacology and Therapeutics}
  \@usebib{vancouver}{Vancouver}{}}

9.3.3.24 Physiology

Physiology (department); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

\DeclareOption{physio}{%
  \department{Physiology}
  \@usebib{vancouver}{Vancouver}{}}

9.3.3.25 Psychiatry
9.3.3.26 Radiology

Radio, Radiology (department) in Medicine (school); using the Harvard citation format from the agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

9.3.3.27 Speech and Hearing Sciences

Speech, Speech and Hearing Sciences (department) in Clinical Therapies (school); using the APA citation format from the apacite.bst BibTeX style with the apacite package (confirmed by F.Gibbon@ucc.ie).

9.3.3.28 Surgery
surg  Surgery (department) in Medicine (school); using the Vancouver citation format from the vancouver.bst BibTeX style (confirmed by siun.oflynn@ucc.ie).

\DeclareOption{surg}{%  \\
school{Medicine}  \\
department{Surgery}  \\
@usebib{vancouver}{Vancouver}{}}

9.3.4 SEFS

9.3.4.1 Food Business and Development

foodbus  Food Business and Development (department) in Food and Nutritional Sciences (school); using the Harvard citation format from the agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{foodbus}{%  \\
school{Food and Nutritional Sciences}  \\
department{Food Business and Development}  \\
@usebib[natbib,har2nat]{agsm}{Harvard}{}}

9.3.4.2 Statistics

stats  Statistics (department); using the Harvard citation format from the apsr.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{stats}{%  \\
department{Statistics}  \\
@usebib[natbib,har2nat]{apsr}{Harvard}{}}

9.3.4.3 Physiology

75
9.3.4.4 Applied Mathematics

Applied Mathematics (department); using the Default citation format from the alpha.bst BibTeX style (unconfirmed).

9.3.4.5 Biological, Earth and Environmental Sciences

Biological, Earth and Environmental Sciences (school); using the Oxford citation format from the apsr.bst BibTeX style with the natbib and har2nat packages (confirmed by 108117781@umail.ucc.ie).

9.3.4.6 Chemistry

Chemistry (department) in Faculty of Science (school); using the ACS citation format from the achemso.bst BibTeX style with the natbib package (confirmed by j.sodeau@ucc.ie).
9.3.4.7 Process and Chemical Engineering

Process and Chemical Engineering (department); using the Harvard citation format from the \texttt{agsm.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

9.3.4.8 Civil and Environmental Engineering

Civil and Environmental Engineering (department) in Engineering (school); using the Harvard citation format from the \texttt{agsm.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

9.3.4.9 Computer Science

Computer Science (department) in Faculty of Science (school); using the Default citation format from the \texttt{alpha.bst} \LaTeX{} style (unconfirmed).
9.3.4.10 Electrical and Electronic Engineering

Electrical and Electronic Engineering (department) in Engineering (school); using the Harvard citation format from the agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{elec}{% 
\school{Engineering} 
\department{Electrical and Electronic Engineering} 
\@usebib[natbib,har2nat]{agsm}{Harvard}{%}

9.3.4.11 Engineering

Engineering (school); using the Harvard citation format from the agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\DeclareOption{engineering}{% 
\school{Engineering} 
\@usebib[natbib,har2nat]{agsm}{Harvard}{%}

9.3.4.12 Food and Nutritional Sciences

Food and Nutritional Sciences (school); using the Default citation format from the alpha.bst BibTeX style (unconfirmed).

\DeclareOption{food}{% 
\school{Food and Nutritional Sciences} 
\@usebib(alpha){Default}{%}
9.3.4.13 Geology

geol Geology (department) in Faculty of Science (school); using the Default citation format from the alpha.bst BibTeX style (unconfirmed).

450 \DeclareOption{geol}{%
451 \school[]{Faculty of Science}
452 \department{Geology}
453 \@usebib(alpha){Default}{}
454 }

9.3.4.14 Mathematics

maths Mathematics (department) in Mathematical Sciences (school); using the Default citation format from the alpha.bst BibTeX style (unconfirmed).

455 \DeclareOption{maths}{%
456 \school{Mathematical Sciences}
457 \department{Mathematics}
458 \@usebib(alpha){Default}{}
459 }

9.3.4.15 Microbiology

microbio Microbiology (department); using the Default citation format from the alpha.bst BibTeX style (unconfirmed).

460 \DeclareOption{microbio}{%
461 \department{Microbiology}
462 \@usebib(alpha){Default}{}
463 }

9.3.4.16 Microelectronic Engineering

microelec Microelectronic Engineering (department) in Engineering (school); using the Harvard citation format from the
agsm.bst BibTeX style with the natbib and har2nat packages (unconfirmed).

\begin{verbatim}
\DeclareOption{microelec}{%
  \school{Engineering}
  \department{Microelectronic Engineering}
  \@usebib[natbib,har2nat]{agsm}{Harvard}{}}
\end{verbatim}

9.3.4.17 Physics

\begin{verbatim}
\DeclareOption{physics}{% 
  \school{Science} 
  \department{Physics} 
  \@usebib{ieeetr}{Transactions of the IEEE}{}}
\end{verbatim}

9.3.4.18 Faculty of Science

\begin{verbatim}
\DeclareOption{scifac}{% 
  \school{Faculty of Science} 
  \@usebib{alpha}{Default}{}}
\end{verbatim}

9.3.4.19 Zoology, Ecology and Plant Science

\begin{verbatim}
\DeclareOption{zeps}{% 
  \school{Zoology, Ecology and Plant Science} 
  \@usebib[oxford]{oxford_en}{Oxford}{}}
\end{verbatim}
9.3.5 INST

9.3.5.1 Irish Management

\texttt{imi} Irish Management (institute); using the Harvard citation format from the \texttt{dcu.bst} \LaTeX{} style with the \texttt{natbib} and \texttt{har2nat} packages (unconfirmed).

\begin{verbatim}
482 \DeclareOption{imi}{%
483  \institute{Irish Management}
484  \@usebib[natbib,har2nat]{dcu}{Harvard}{}
485 }
\end{verbatim}

9.3.5.2 Tyndall National

\texttt{tyndall} Tyndall National (institute); using the Alpha citation format from the \texttt{alpha.bst} \LaTeX{} style (unconfirmed).

\begin{verbatim}
486 \DeclareOption{tyndall}{%
487  \institute{Tyndall National}
488  \@usebib{alpha}{Alpha}{}
489 }
\end{verbatim}

9.4 Degree options

These are the degree options: these are static and require three ancillary commands to define them in a similar manner to those for the divisions. These declarations are generated from an XML structure in the master document.

\texttt{\@degreehandle} A handle for the degree title.

\begin{verbatim}
490 \def\@degreehandle{Degree of \@degree}
\end{verbatim}

\texttt{\@degree} A default value.

\begin{verbatim}
491 \def\@degree{[Unspecified]}
\end{verbatim}
The switch `ifthesis` is used to detect non-thesis use (for example when the document class is used for its own documentation, or for a term paper or essay).

\newif{ifthesis}
\newcommand{\degree}[1]{\gdef\@degree{#1}\thesistrue}

\section{ACSSS}

\subsection{Doctor of Literature}

\texttt{dlitt} Doctor of Literature; .
\DeclSO{dlitt}{%\degree{Doctor of Literature}}

\subsection{Doctor of Celtic Literature}

\texttt{dlittcelt} Doctor of Celtic Literature; .
\DeclSO{dlittcelt}{%\degree{Doctor of Celtic Literature}}

\subsection{Doctor of Music}

\texttt{dmus} Doctor of Music; .
\DeclSO{dmus}{%\degree{Doctor of Music}}

\subsection{Doctor of Social Science}

\texttt{dsocsci} Doctor of Social Science; .
\DeclSO{dsocsci}{%\degree{Doctor of Social Science}}
9.4.1.5 Doctor of Philosophy

\texttt{phd} Doctor of Philosophy; .

\texttt{506 DeclareOption\{phd\}\{}
\texttt{507 \ degree\{Doctor of Philosophy\}
\texttt{508 \}

9.4.1.6 Doctor of Philosophy in Education — Structured

\texttt{phded} Doctor of Philosophy in Education — Structured; .

\texttt{509 DeclareOption\{phded\}\{}
\texttt{510 \ degree\{Doctor of Philosophy in Education---- Structured\}
\texttt{511 \}

9.4.1.7 Doctor of Philosophy in Social Sciences

\texttt{phdss} Doctor of Philosophy in Social Sciences; .

\texttt{512 DeclareOption\{phdss\}\{}
\texttt{513 \ degree\{Doctor of Philosophy in Social Sciences\}
\texttt{514 \}

9.4.1.8 Doctor of Philosophy in Texts, Contexts and Cultures

\texttt{phdtcc} Doctor of Philosophy in Texts, Contexts and Cultures; .

\texttt{515 DeclareOption\{phdtcc\}\{}
\texttt{516 \ degree\{Doctor of Philosophy in Texts, Contexts and Cultures\}
\texttt{517 \}}

9.4.1.9 Master of Arts
9.4.1.10 Master of Business Systems (Asian Business)

9.4.1.11 Master of Education

9.4.1.12 Master of Philosophy

9.4.1.13 Master of Planning and Sustainable Development
9.4.1.14 Master of Social Science

\texttt{msocsc} Master of Social Science; .

\begin{verbatim}
534 \DeclareOption{msocsc}{% 
535 \degree{Master of Social Science} 
536 }
\end{verbatim}

9.4.1.15 Master of Social Work

\texttt{msw} Master of Social Work; .

\begin{verbatim}
537 \DeclareOption{msw}{% 
538 \degree{Master of Social Work} 
539 }
\end{verbatim}

9.4.2 BUSLAW

9.4.2.1 Doctor of Philosophy

\texttt{phd} Doctor of Philosophy; .

\begin{verbatim}
540 \DeclareOption{phd}{% 
541 \degree{Doctor of Philosophy} 
542 }
\end{verbatim}

9.4.2.2 Master of Business Systems (Asian Business)

\texttt{mbsasian} Master of Business Systems (Asian Business); .

\begin{verbatim}
543 \DeclareOption{mbsasian}{% 
544 \degree{Master of Business Systems 
545 (Asian Business)} 
546 }
\end{verbatim}
9.4.2.3 Doctor of Business Economics

dbe Doctor of Business Economics; 

\DeclareOption{dbe}{% 
 \degree{Doctor of Business Economics} 
}

9.4.2.4 Doctor of Economic Science

deconsc Doctor of Economic Science; 

\DeclareOption{deconsc}{% 
 \degree{Doctor of Economic Science} 
}

9.4.2.5 Doctor of Law

lld Doctor of Law; 

\DeclareOption{lld}{% 
 \degree{Doctor of Law} 
}

9.4.2.6 Doctor of Philosophy in Business Information Systems

phdbis Doctor of Philosophy in Business Information Systems; 

\DeclareOption{phdbis}{% 
 \degree{Doctor of Philosophy in Business Information Systems} 
}

9.4.2.7 Master of Law

llm Master of Law; 

\DeclareOption{llm}{% 
 \degree{Master of Law} 
}
9.4.2.8 Master of Law (Criminal Justice)

\texttt{llmcj}\ Master of Law (Criminal Justice);.

\texttt{\DeclareOption{llmcj}{\\degree{Master of Law}\ (Criminal Justice)}}

9.4.2.9 Master of Law (e-Law)

\texttt{llme}\ Master of Law (e-Law);.

\texttt{\DeclareOption{llme}{\\degree{Master of Law}\ (e-Law)}}

9.4.2.10 Master of Law (Practitioner)

\texttt{llmp}\ Master of Law (Practitioner);.

\texttt{\DeclareOption{llmp}{\\degree{Master of Law}\ (Practitioner)}}

9.4.2.11 Master of Business Administration

\texttt{mba}\ Master of Business Administration;.

\texttt{\DeclareOption{mba}{\\degree{Master of Business Administration}}}

9.4.2.12 Master of Business Systems

87
9.4.2.13 Master of Business Systems (Business Economics)

9.4.2.14 Master of Business Systems (Business Information Systems)

9.4.2.15 Master of Business Systems (Economics of Business Practice)
9.4.2.16 Master of Business Systems (Co-operative and Social Enterprise)

mbscse Master of Business Systems (Co-operative and Social Enterprise);.

592 \DeclareOption{mbscse}{%
593   \degree{Master of Business Systems
594   (Co-operative and Social Enterprise)}
595 }

9.4.2.17 Master of Business Systems (Electronic Business)

mbseb Master of Business Systems (Electronic Business);.

596 \DeclareOption{mbseb}{%
597   \degree{Master of Business Systems
598   (Electronic Business)}
599 }

9.4.2.18 Master of Business Systems (Food Marketing)

mbsfm Master of Business Systems (Food Marketing);.

600 \DeclareOption{mbsfm}{%
601   \degree{Master of Business Systems
602   (Food Marketing)}
603 }

9.4.2.19 Master of Business Systems (Government)

mbsg Master of Business Systems (Government);.

604 \DeclareOption{mbsg}{%
605   \degree{Master of Business Systems
606   (Government)}
607 }
9.4.2.20 Master of Business Systems (Health Services Management)

mbshsm Master of Business Systems (Health Services Management);.

608 \DeclareOption{mbshsm}{%
609   \degree{Master of Business Systems
610     (Health Services Management)}
611 }

9.4.2.21 Master of Business Systems (Innovation in European Business)

mbsieb Master of Business Systems (Innovation in European Business);.

612 \DeclareOption{mbsieb}{%
613   \degree{Master of Business Systems
614     (Innovation in European Business)}
615 }

9.4.2.22 Master of Business Systems (International Public Policy and Diplomacy)

mbsippd Master of Business Systems (International Public Policy and Diplomacy);.

616 \DeclareOption{mbsippd}{%
617   \degree{Master of Business Systems
618     (International Public Policy and Diplomacy)}
619 }

9.4.2.23 Master of Business Systems (Information Systems for Business Performance)

mbsisbp Master of Business Systems (Information Systems for Business Performance);.
9.4.2.24 Master of Business Systems (Management Information and Managerial Accounting Systems)

Master of Business Systems (Management Information and Managerial Accounting Systems);.

9.4.2.25 Master of Business Systems (Management and Marketing)

Master of Business Systems (Management and Marketing);.

9.4.2.26 Master of Commerce

Master of Commerce;.

9.4.2.27 Master of Commerce (Supply Chain Management — Lean SCM Black Belt)
9.4.2.28 Master of Commerce (Business Economics)

Master of Commerce (Business Economics);.

9.4.2.29 Master of Commerce (Government and Public Policy)

Master of Commerce (Government and Public Policy);.

9.4.2.30 Master of Commerce (Supply Chain Management)

Master of Commerce (Supply Chain Management);.
9.4.2.31 Master of Economic Science

\texttt{meconsc}  Master of Economic Science; .

\begin{verbatim}
\DeclareOption{meconsc}{
  \degree{Master of Economic Science}
}
\end{verbatim}

9.4.2.32 Master of Science (Corporate Finance)

\texttt{msccf}  Master of Science (Corporate Finance); .

\begin{verbatim}
\DeclareOption{msccf}{
  \degree{Master of Science (Corporate Finance)}
}
\end{verbatim}

9.4.2.33 Master of Science (Financial Economics)

\texttt{mscfe}  Master of Science (Financial Economics); .

\begin{verbatim}
\DeclareOption{mscfe}{
  \degree{Master of Science (Financial Economics)}
}
\end{verbatim}

9.4.2.34 Master of Science (Health Economics)

\texttt{msche}  Master of Science (Health Economics); .

\begin{verbatim}
\DeclareOption{msche}{
  \degree{Master of Science (Health Economics)}
}
\end{verbatim}

9.4.3 MED

9.4.3.1 Doctor of Philosophy

93
9.4.3.2 Doctor of Clinical Dentistry

dclindent Doctor of Clinical Dentistry; .

9.4.3.3 Doctor of Medicine

dmed Doctor of Medicine; .

9.4.3.4 Doctor of Nursing Practice

dnp Doctor of Nursing Practice; .

9.4.3.5 Doctor of Occupational Therapy

docct Doctor of Occupational Therapy; .
9.4.3.6 Doctor of Medicine

\textmd{Doctor of Medicine; .

\texttt{\DeclareOption{md}}
\texttt{%
\degree{Doctor of Medicine}}
\texttt{}}

9.4.3.7 Doctor of Philosophy in Cancer Biology

\textphdcb{Doctor of Philosophy in Cancer Biology; .

\texttt{\DeclareOption{phdcb}}
\texttt{%
\degree{Doctor of Philosophy in Cancer Biology}}
\texttt{}}

9.4.3.8 Doctor of Philosophy in Health Services Research

\textphdhsr{Doctor of Philosophy in Health Services Research; .

\texttt{\DeclareOption{phdhsr}}
\texttt{%
\degree{Doctor of Philosophy in Health Services Research}}
\texttt{}}

9.4.3.9 Master of Obstetrics

\textmao{Master of Obstetrics; .

\texttt{\DeclareOption{mao}}
\texttt{%
\degree{Master of Obstetrics}}
\texttt{}}

9.4.3.10 Master of Surgery

\textmch{Master of Surgery; .

\texttt{\DeclareOption{mch}}
\texttt{%
\degree{Master of Surgery}}
\texttt{}}
9.4.3.11 Master in Dental Public Health

\texttt{mdph} Master in Dental Public Health; .

\texttt{\DeclareOption{mdph}{\degree{Master in Dental Public Health}}}

9.4.3.12 Master of Dental Science

\texttt{mds} Master of Dental Science; .

\texttt{\DeclareOption{mds}{\degree{Master of Dental Science}}}

9.4.3.13 Master in Sport and Exercise Medicine

\texttt{mmedsc} Master in Sport and Exercise Medicine; .

\texttt{\DeclareOption{mmedsc}{\degree{Master in Sport and Exercise Medicine}}}

9.4.3.14 Master in Public Health

\texttt{mph} Master in Public Health; .

\texttt{\DeclareOption{mph}{\degree{Master in Public Health}}}

9.4.3.15 Master of Science (Clinical Pharmacy)

\texttt{msccp} Master of Science (Clinical Pharmacy); .

\texttt{\DeclareOption{msccp}{\degree{Master of Science (Clinical Pharmacy)}}}
9.4.3.16 Master of Science (Evidence-Based Therapy Practice)

\texttt{mscebtp} Master of Science (Evidence-Based Therapy Practice);.

\begin{verbatim}
712 \DeclareOption{mscebtp}{
713 \degree{Master of Science
714 (Evidence-Based Therapy Practice)}
715 }
\end{verbatim}

9.4.3.17 Master of Science (Midwifery)

\texttt{mscm} Master of Science (Midwifery);.

\begin{verbatim}
716 \DeclareOption{mscm}{
717 \degree{Master of Science
718 (Midwifery)}
719 }
\end{verbatim}

9.4.3.18 Master of Science (Obstetrics and Gynaecology)

\texttt{mscog} Master of Science (Obstetrics and Gynaecology);.

\begin{verbatim}
720 \DeclareOption{mscog}{
721 \degree{Master of Science
722 (Obstetrics and Gynaecology)}
723 }
\end{verbatim}

9.4.3.19 Master of Science (Occupational Health)

\texttt{mscoh} Master of Science (Occupational Health);.

\begin{verbatim}
724 \DeclareOption{mscoh}{
725 \degree{Master of Science
726 (Occupational Health)}
727 }
\end{verbatim}
9.4.3.20 Master of Science (Pharmaceutical Technology and Quality Systems)

\texttt{mscptqs} Master of Science (Pharmaceutical Technology and Quality Systems); .

\begin{verbatim}
\DeclareOption{mscptqs}{%
  \degree{Master of Science (Pharmaceutical Technology and Quality Systems)}
}
\end{verbatim}

9.4.4 SEFS

9.4.4.1 Doctor of Philosophy

\texttt{phd} Doctor of Philosophy; .

\begin{verbatim}
\DeclareOption{phd}{%
  \degree{Doctor of Philosophy}
}
\end{verbatim}

9.4.4.2 Master of Planning and Sustainable Development

\texttt{mplan} Master of Planning and Sustainable Development; .

\begin{verbatim}
\DeclareOption{mplan}{%
  \degree{Master of Planning and Sustainable Development}
}
\end{verbatim}

9.4.4.3 Doctor of Science

\texttt{dsc} Doctor of Science; .

\begin{verbatim}
\DeclareOption{dsc}{%
  \degree{Doctor of Science}
}
\end{verbatim}
9.4.4.4 Master of Engineering

\textit{me} Master of Engineering; .

\begin{verbatim}
\DeclareOption{me}{%
  \degree{Master of Engineering}
}\end{verbatim}

9.4.4.5 Master of Engineering Science

\textit{mengsc} Master of Engineering Science; .

\begin{verbatim}
\DeclareOption{mengsc}{%
  \degree{Master of Engineering Science}
}\end{verbatim}

9.4.4.6 Master of Engineering Science (Information Technology in Architecture, Engineering and Construction)

\textit{mengscit} Master of Engineering Science (Information Technology in Architecture, Engineering and Construction); .

\begin{verbatim}
\DeclareOption{mengscit}{%
  \degree{Master of Engineering Science (Information Technology in Architecture, Engineering and Construction)}
}\end{verbatim}

9.4.4.7 Master of Engineering Science (Microelectronics)

\textit{mengscm} Master of Engineering Science (Microelectronics); .

\begin{verbatim}
\DeclareOption{mengscm}{%
  \degree{Master of Engineering Science (Microelectronics)}
}\end{verbatim}
9.4.4.8 Master of Engineering Science (Microelectronic Design)

\texttt{mengscmd} \hspace{1em} \text{Master of Engineering Science (Microelectronic Design); .}

\begin{verbatim}
755 \DeclareOption{mengscmd}{%
756  \degree{Master of Engineering Science
757    (Microelectronic Design)}
758 }
\end{verbatim}

9.4.4.9 Master of Engineering Science in Mechanical Engineering (Manufacturing, Process and Automation Systems)

\texttt{mengscme} \hspace{1em} \text{Master of Engineering Science in Mechanical Engineering (Manufacturing, Process and Automation Systems); .}

\begin{verbatim}
759 \DeclareOption{mengscme}{%
760  \degree{Master of Engineering Science in Mechanical Engineering
761    (Manufacturing, Process and Automation Systems)}
762 }
\end{verbatim}

9.4.4.10 Master of Engineering Science (Pharmaceutical and Biopharmaceutical Engineering)

\texttt{mengscpbe} \hspace{1em} \text{Master of Engineering Science (Pharmaceutical and Biopharmaceutical Engineering); .}

\begin{verbatim}
763 \DeclareOption{mengscpbe}{%
764  \degree{Master of Engineering Science
765    (Pharmaceutical and Biopharmaceutical Engineering)}
766 }
\end{verbatim}

9.4.4.11 Master of Engineering Science (Sustainable Energy)

\texttt{mengscse} \hspace{1em} \text{Master of Engineering Science (Sustainable Energy); .}

\begin{verbatim}
767 \DeclareOption{mengscse}{%
768  \degree{Master of Engineering Science
769 }
\end{verbatim}
9.4.4.12 Master of Science

\texttt{msc} \texttt{Master of Science;} .

\verbatiminput{771}

9.4.4.13 Master of Applied Science (Analytical Chemistry)

\texttt{mscac} \texttt{Master of Applied Science (Analytical Chemistry);} .

\verbatiminput{774}

9.4.4.14 Master of Applied Science (Analysis of Pharmaceutical Compounds)

\texttt{mscapc} \texttt{Master of Applied Science (Analysis of Pharmaceutical Compounds);} .

\verbatiminput{778}

9.4.4.15 Master of Applied Science (Biotechnology)

\texttt{mscb} \texttt{Master of Applied Science (Biotechnology);} .

\verbatiminput{782}
9.4.4.16 Master of Applied Science (Bioinformatics with Systems Biology)

\texttt{mscbsb} Master of Applied Science (Bioinformatics with Systems Biology);.

\texttt{\DeclareOption{mscbsb}{\degree{Master of Applied Science (Bioinformatics with Systems Biology)}}}

9.4.4.17 Master of Science (Co-operative Organisation/Food Marketing/Rural Development)

\texttt{msccoop} Master of Science (Co-operative Organisation/Food Marketing/Rural Development);.

\texttt{\DeclareOption{msccoop}{\degree{Master of Science (Co-operative Organisation/Food Marketing/Rural Development)}}}

9.4.4.18 Master of Applied Science (Ecological Assessment)

\texttt{mscea} Master of Applied Science (Ecological Assessment);.

\texttt{\DeclareOption{mscea}{\degree{Master of Applied Science (Ecological Assessment)}}}

9.4.4.19 Master of Applied Science (Environmental Analytical Chemistry)

\texttt{msceac} Master of Applied Science (Environmental Analytical Chemistry);.

\texttt{\DeclareOption{msceac}{\degree{Master of Applied Science}}}
9.4.4.20 Master of Science (Food Business)

\texttt{mscfb} Master of Science (Food Business); 

\texttt{\DeclareOption{mscfb}}{\degree{Master of Science} (Food Business)}

9.4.4.21 Master of Applied Science (Food Microbiology)

\texttt{mscfm} Master of Applied Science (Food Microbiology); 

\texttt{\DeclareOption{mscfm}}{\degree{Master of Applied Science} (Food Microbiology)}

9.4.4.22 Master of Applied Science (Food Science)

\texttt{mscfs} Master of Applied Science (Food Science); 

\texttt{\DeclareOption{mscfs}}{\degree{Master of Applied Science} (Food Science)}

9.4.4.23 Master of Applied Science (Geographical Information Systems and Remote Sensing)

\texttt{mscgis} Master of Applied Science (Geographical Information Systems and Remote Sensing); 

\texttt{\DeclareOption{mscgis}}{\degree{Master of Applied Science} (Geographical Information Systems and Remote Sensing)}
9.4.4.24 Master of Applied Science (Marine Biology)

\texttt{mscmb} \ Master of Applied Science (Marine Biology); 

\texttt{DeclareOption{mscmb}}{% 
\degree{Master of Applied Science 
(Marine Biology)} 
%
}

9.4.4.25 Master of Applied Science (Mathematical Modelling and Scientific Computing)

\texttt{mscmmsc} \ Master of Applied Science (Mathematical Modelling and Scientific Computing); 

\texttt{DeclareOption{mscmmsc}}{% 
\degree{Master of Applied Science 
(Mathematical Modelling and Scientific Computing)} 
%
}

9.4.4.26 Master of Applied Science (Nutritional Sciences)

\texttt{mscns} \ Master of Applied Science (Nutritional Sciences); 

\texttt{DeclareOption{mscns}}{% 
\degree{Master of Applied Science 
(Nutritional Sciences)} 
%
}

9.4.4.27 Master of Science (Rural Development)

\texttt{mscrd} \ Master of Science (Rural Development); 


9.4.4.28 Master of Applied Science (Software and Systems for Mobile Networks)

`mscssmn` Master of Applied Science (Software and Systems for Mobile Networks);.

9.4.4.29 Master of Science (Technology Management)

`msctm` Master of Science (Technology Management);.

9.5 Other options

The remaining options mainly affect formatting.

9.5.1 Draft and final modes

`\class@mode` Draft mode is the default, but we define a macro to allow it to be passed through to the report class as a default.
We set the overfull rule as normal for draft mode, and set the running footer to indicate draft mode for activation at the end of processing, once the fancyhdr package has been loaded. It also sets \sloppy and \raggedbottom, as these are likely to prove useful in complex texts with substantial amounts of mixed formatting (mathematics, figures, tables, long words, etc).

The final-mode setting sets the overfull rule to nothing, records the status in \class@mode, and sets the same tolerances as for draft mode.

### 9.5.2 Type size and paper size

Provide a similar recording feature to pass the size option through to the report class. The default is 11pt.

The same applies to passing the paper size. Only A4 and Letter are relevant here.
Production of a List of Tables and a List of Figures is automated: if no figure or table is used, then no list is produced.

\textbf{nolot} Allow thesis not to have any List of Tables with the \texttt{nolot} option and the \texttt{\iflot} switch.

\begin{verbatim}
\newif\iflot\lottrue
\DeclareOption{nolot}{\lotfalse}
\end{verbatim}

\textbf{nolof} Allow thesis not to have any List of Figures with the \texttt{nolof} option and the \texttt{\iflof} switch.

\begin{verbatim}
\newif\iflof\loftrue
\DeclareOption{nolof}{\loffalse}
\end{verbatim}

At the end of the document, the counters for figures and tables are tested, and the false value written to the auxiliary file, where it will be detected on the next pass.

\begin{verbatim}
\newcounter{UCC@totfig}
\newcounter{UCC@tottab}
\AtBeginDocument{%
  \let\UCC@end@figure\endfigure
  \newcommand{\UCC@endfigure}{\UCC@end@figure\global\advance\c@UCC@totfig by1}
  \let\endfigure\UCC@endfigure
  \let\UCC@end@table\endtable
  \newcommand{\UCC@endtable}{\UCC@end@table\global\advance\c@UCC@tottab by1}
  \let\endtable\UCC@endtable%
}
\AtEndDocument{%
  \ifnum\c@UCC@totfig=0 \write\@mainaux{\string\global\string\lotfalse}
  \fi
  \ifnum\c@UCC@tottab=0 \write\@mainaux{\string\global\string\loffalse}
  \fi
}
\end{verbatim}
shorttoc  Allow the Table of Contents to be limited to subsections

885 \newif\ifshorttoc\shorttocfalse
886 \DeclareOption{shorttoc}{\shorttoctrue}

9.5.4 Irish-language theses

gaeilge  Provide for theses in Irish. This option loads the babel package with the \texttt{english} and \texttt{irish} options, with \texttt{irish} in the last place as the default language for the document. It also loads the eiad font package for sean-chló type.

887 \DeclareOption{gaeilge}{\%

At the end of the package processing, it makes some changes to tokens which are not handled by the babel package (\texttt{\institution [defined in this package], \ackname [defined in the package], and \today [defined by \LaTeX]).

888 \AtEndOfClass{\%
889 \RequirePackage[english,irish]{babel}\%
890 \RequirePackage{eiad}\
891 \institution{\textsc{\large Coláiste Naisiúnta na hÉireann, Corcaigh}}
892 \renewcommand\ackname{Buíochas}
893 \def\today{\number\day\space\ifcase\month\or
894 Eanáir\or Feabhra\or Márta\or Aibreán\or
895 Bealtaine\or Meitheamh\or Uíbh Iarla\or \unasa\or
896 Meán Fómhair\or De réidh Fómhair\or \r or
897 Samhain\or Mí na Nollag\fi\space
898 \number\year}\%
899

Finally, we change the tokens for the handles previously defined for the division and degree options above; and we preset \texttt{\raggedright} because the hyphenation of Irish is widely regarded as problematic.

900 \def\@schoolhandle{Scoil an}
901 \def\@departmenthandle{Roinn an}
902 \def\@institutehandle{Institúid }
903 \def\@hospitalhandle{Spidéal }
904 \def\@centrehandle{Lárionad}


9.5.5 Chinese, Japanese, and Korean

cjk CJK setting needs the CJK package preloaded, so we flag it with an option in order to activate it later via the \ifcjk switch.

\newif\ifcjk\cjkfalse
\DeclareOption{cjk}{\cjktrue}

9.5.6 Wordprocessor emulation

wp This enables the formatting to resemble the Word defaults. This too is experimental.

\DeclareOption{wp}{%
\AtBeginDocument{%
\everypar{\vrule depth.2ex width0pt}%
\RequirePackage{pslatex,ragged2e}%
\RaggedRight
\hyphenpenalty=99999 \exhyphenpenalty=99999
\def\@makechapterhead#1{%
\begin{center}\normalfont
\ifnum \c@secnumdepth >\m@ne
\if@mainmatter
\LARGE{\sffamily{\@chapapp}\space
\LARGE{\thechapter}}%
\par
\vspace*{3\baselineskip}%
\end{center}}%
\renewcommand{\section}{%
9.5.7 Justification, indentation, and paragraph-spacing

This is a much-argued area.
\texttt{ifjustified}  Documents printed on office-size paper do not read easily when justified with long line-lengths such as those effective when the Registrar’s Rules are applied to A4 or Letter paper. The default is therefore for justification to be turned off, but the \texttt{justified} option is provided to allow it to be turned back on by setting the \texttt{ifjustified} switch.

\texttt{968 newif\ifjustified}
\texttt{969 DeclareOption{justified}{\justifiedtrue}}

\texttt{ifindented}  However, it is also easier to read long structured documents when the paragraphs are \textit{not} set snug with indentation, like a book, but spaced out (and therefore unindented, as you never use indentation when using paragraph-space in Anglo-American printing). We therefore flag indentation in an option which sets the \texttt{ifindented} switch, so that it can be set or unset later, along with paragraph-spacing using the parskip package.

\texttt{970 newif\ifindented\indentedfalse}
\texttt{971 DeclareOption{indented}{\indentedtrue}}

\subsection*{9.5.8 Running headers and footers}

\texttt{iffancy}  Because theses are long documents, and because parts or all of them are likely to be reprinted or even photocopied at some stage, it is important that every page should be identifiable in isolation. The fancyhdr package is used to do this, but some users were insistent that they did not want running headers and footers, so the \texttt{plainheaders} allows it to be turned off via the \texttt{iffancy} switch.

\texttt{972 newif\iffancy}
\texttt{973 fancytrue}
\texttt{974 DeclareOption{plainheaders}{\fancyfalse}}

\subsection*{9.5.9 Dissertations, term papers, and essays}

WARNING: EXPERIMENTAL
This is for minor dissertations.

This is for term papers.

This is for undergraduate essays.

9.5.10 Two-sided output

These are normally printed on one side of the paper for submission, especially for externs to read.

The twoside is available for when a very long thesis needs to economise on paper, or when the thesis is being bound as a book.
9.5.11 Applying the options

At last, issue an error message for any bogus or unsupported options:

\DeclareOption*{%
\PackageWarning{uccthesis}{Unknown option \CurrentOption; please Read The Fine Manual}%
}

and process those we support, and then load the report document class with the values we have gathered above.

\ProcessOptions\relax
\LoadClass{\class@mode,titlepage,\UCC@sided,\class@size,\class@paper}{report}

9.6 Packages required for the class

\inputenc UTF-8 is the default character set, to allow for use of any character in any writing system. Some characters are not specified for all fonts, so may have to be specified manually.

\RequirePackage[utf8x]{inputenc}[2008/03/30]
\PrerenderUnicode{-}
\PrerenderUnicode{š}
\PrerenderUnicode{´c}
\PrerenderUnicode{Å}

\fontenc Extended font encoding to handle UTF-8.

\RequirePackage[T1]{fontenc}
geometry Package for establishing margins and text area. Sets the page size to values within the Registrar’s specification. This has the effect of making the textwidth 6¼” (16cm) and the textheight 9” (23cm) on an A4 page. The headheight is set to accommodate the default running headers.

\begin{verbatim}
1019 \RequirePackage[right=2.5cm,top=3cm,bottom=3cm,
1020 left=4cm,headheight=22pt]{geometry}
\end{verbatim}

lmodern The updated Computer Modern typeface as the default.

\begin{verbatim}
1021 \RequirePackage{lmodern}
\end{verbatim}

url Handling of URI formatting. This is required in some bibliographic formats.

\begin{verbatim}
1022 \RequirePackage[obeyspaces,hyphens,spaces,
1023 lowtilde]{url}
\end{verbatim}

graphicx Provide for graphics (PNG, JPG, or PDF format (only) for pdflatex; EPS format (only) for standard \LaTeX).

\begin{verbatim}
1024 \RequirePackage{graphicx}
\end{verbatim}

array Additional column formatting for tables.

\begin{verbatim}
1025 \RequirePackage{array}
\end{verbatim}

calc Required for the calculation of extra widths for margin adjustment.

\begin{verbatim}
1026 \RequirePackage{calc}
\end{verbatim}

soul Provides letter-spacing, strikeout, and underlining. Used for letter-spacing in the title page.

\begin{verbatim}
1027 \RequirePackage{soul}
\end{verbatim}

textrn Additional commands for common symbols and punctuation.

\begin{verbatim}
1028 \RequirePackage{textcomp}
\end{verbatim}
9.7 Modifications to the report class and packages

Now that the report class and the packages are loaded, we can start making the necessary changes.

\texttt{\textbackslash geometry} Fix the geometry for two-sided work.

\begin{verbatim}
1032 \ifUCC\texttt{oneside} else
1033 \texttt{\newgeometry\{inner=4cm, outer=2.5cm, top=3cm, bottom=3cm, headheight=22pt, twoside\}}
1035 \fi
\end{verbatim}

\texttt{\textbackslash cjktext} Here we use the flagged setting specified earlier to ensure UTF-8 character encoding is used to invoke the CJK package and the \texttt{cjk} option with the \texttt{\ifcjk} switch.

\begin{verbatim}
1036 \ifcjk
1037 \texttt{\RequirePackage[encapsulated]{CJK}}
1038 \texttt{\newcommand{\cjktext}[1]\{\begin{CJK}{UTF8}{min}\#1\end{CJK}\}}
1039 \fi
\end{verbatim}

\texttt{\textbackslash bibname} Call the references References, not Bibliography.

\begin{verbatim}
1040 \renewcommand{\bibname}{References}
\end{verbatim}
natbib Test dissertations with natbib.

The flags implementing [re-]justification and [re-]indentation explained above are used here to control loading of the parskip, ccaption, and footmisc packages.

Justified text, signalled with \ifjustified requires only footmisc, and only with the bottom, stable options, because LaTeX’s default is to justify everything.

On the other hand, unjustified text (the default) requires the ccaption package and its re-setting of the captioning to be unjustified; and the ragged option to the footmisc package.
Unindented text is the default, so it gets turned on here, along with paragraph-spacing, unless the \textit{indented} option has been specified, which sets the \texttt{\ifindented}.

\RequirePackage{ccaption}
\captionstyle{\raggedright}
\RequirePackage[bottom, ragged, stable]{footmisc}
\raggedright

\ifindented
\parindent1.5em
\else
\RequirePackage{parskip}
\fi

The default running headers and footers can be defeated by using the \texttt{plainheaders} option, so the loading of the \texttt{fancyhdr} package is controlled by the \texttt{\iffancy} switch.

\newlength{\UCC@textbodywidth}
\setlength{\UCC@textbodywidth}{\textwidth}
\iffancy
\message{Fancy mode }%
\RequirePackage{fancyhdr}
\pagestyle{fancy}

We set the default page style to fancy. Bear in mind here that although we are using the report class as our basis, it is single-sided by default, but we need to accommodate twosided usage.

\iffancy\
\message{One-sided plain}%
\fancypagestyle{plain}{}
\fancyhf{}
\cfoot{\thepage}%
\renewcommand{\headrulewidth}{0pt}
\renewcommand{\footrulewidth}{0pt})
\else
\message{Two-sided plain}%
\fancypagestyle{plain}{}
\fi
The left-hand running header checks to see if the right and left marks are the same: if so, do nothing (ie, leave the header as it is); otherwise, use the left mark (the chapter title). As chapter titles can be quite long, we set them in a \parbox just under half a page-width wide, so they will wrap and not interfere with the right-hand running header...

...which contains the section title in the right mark, which we typeset exactly the same way, except that it is made flush right for symmetry. There is no centre running header.

The running footers are different on fancy and plain pages: on the left goes the title; on the right goes the author; but
on plain pages they are left empty. The centre running footer always contains the page number, as required by the Registrar’s Rules.

```
1122 \ifUCC@oneside
1123 \message{One-sided fancy footers}\
1124 \lfoot{\fancyplain{}{\footnotesize
1125 \parbox[t]{.475\UCC@textbodywidth}{\%
1126 \itshape\raggedright{\@@title}}}}\%
1127 \rfoot{\fancyplain{}{\footnotesize\@author}}
1128 \cfoot{\fancyplain{\small\thepage}{\small\thepage}}
1129 \else
1130 \message{Two-sided fancy footers}\
1131 \fancyfoot[LE]{\fancyplain{}{\footnotesize
1132 \parbox[t]{.475\UCC@textbodywidth}{\%
1133 \itshape\raggedright{\@@title}}}}\%
1134 \fancyfoot[RO]{\fancyplain{}{\footnotesize\@author}}
1135 \fancyfoot[CE,CO]{\fancyplain{\small\thepage}{\small\thepage}}
1136 \fi
```

Finally, we set the header and footer rules to null, and we implement the chapter and section marking to gather the current titling in \chaptermark and \sectionmark, and ensure that the default headers do not perform any uppercasing by setting the \ps@headings command to null.

```
1137 \addtolength{\headheight}{10pt}
1138 \renewcommand{\headrulewidth}{0pt}
1139 \else
1140 \message{^MPlain (non-fancy) mode }\%
1141 \fi
1142 \renewcommand{\chaptermark}[1]{\markboth{\thechapter. \ #1}{}}
1143 \renewcommand{\sectionmark}[1]{\markright{\thesection \ #1}{}}
1144 \def{\ps@headings}{ }
```

Now calculate the time of day and provide for a timestamp to identify draft versions.

```
1145 \newcounter{hours}
1146 \newcounter{minutes}
1147 \newcounter{temp}
1148 \setcounter{hours}{\time}\
1149 \setcounter{minutes}{\value{hours}}\
1150 \divide\c@hours by60 \% hours is now right
```
Redefine today the European way round, and provide an ISO-format version for the footers.

\newcommand{\adobedate}{D:\number\year
\ifnum\month>9\else0\fi\number\month\ifnum\day>9\else0\fi\number\dayNow00}
\def\TODAY{\number\year{-}  \ifnum\month<10 0\fi\number\month{-}  \ifnum\day<10 0\fi\number\day}

9.8 Metadata

Define the metadata (title, author, and date are already given by \LaTeX in the report class). These are all done the same way, with a default value that gets overridden when an authorial value is given.

\newcommand{\institution}{Institution (nominally still the NUI?).}
\newcommand{\author}{Provide an optional first argument on the \texttt{\author} command for giving the student number.}
\subtitle Optional subtitle.
\begin{verbatim}
1175 \def\@subtitle{\relax}
1176 \newcommand{\subtitle}[1]{\gdef\@subtitle(#1)}
\end{verbatim}

\sponsor Sponsor or funding agency.
\begin{verbatim}
1177 \def\@sponsor{\relax}
1178 \newcommand{\sponsor}[1]{\gdef\@sponsor(#1)}
\end{verbatim}

\supervisor Supervisor, but syntactically this needed a plural value for
the string label used in formatting, so we define
\supervisors as well.
\begin{verbatim}
1179 \def\@supervisor{[Name not supplied]}
1180 \def\@supervisorname{Supervisor}
1181 \newcommand{\supervisor}[1]{\gdef\@supervisor(#1)}
1182 \newcommand{\supervisors}[1]{\gdef\@supervisor(#1)}
1183 \def\@supervisorname{Supervisors}
\end{verbatim}

\module Only for dissertations and essays.
\begin{verbatim}
1184 \def\@module{\relax}
1185 \newcommand{\module}[1]{\gdef\@module(#1)}
\end{verbatim}

\professor Professor. There is some debate about identifying the
Discipline instead…
\begin{verbatim}
1186 \def\@prof{\relax}
1187 \newcommand{\professor}[1]{\gdef\@prof(#1)}
\end{verbatim}

\quals Prior qualifications.
\begin{verbatim}
1188 \def\@quals{\relax}
1189 \newcommand{\qualifications}[1]{\gdef\@quals(#1)}
\end{verbatim}

\volume Optional volume number.
\begin{verbatim}
1190 \def\@volume{\relax}
1191 \def\@maxvolumes{\relax}
1192 \newcommand{\volume #1 of #2}{\gdef\@volume(#1) }
1193 \gdef\@maxvolumes(#2)}
\end{verbatim}

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This is the formal prioritising of the order in which the various divisional identifiers are given, if used: each one is enclosed in a test to ensure it is only used if it has been specified.

\@submission \def\@submission{%  
  \if\@hospital\relax  
  \else\par\textsc{\@hospital}\%  
  \fi  
  \if\@school\relax  
  \else\par\textsc{\@school}\%  
  \fi  
  \if\@department\relax  
  \else\par\textsc{\@department}\%  
  \fi  
  \if\@institute\relax  
  \else\par\textsc{\@institute}\%  
  \fi  
  \if\@centre\relax  
  \else\par\textsc{\@centre}\%  
  \fi  
  \if\@unit\relax  
  \else\par\textsc{\@unit}\%  
  \fi  
}  

Two final commands record the metadata needed to complete the PDF Properties, which is needed for electronic submission.

\subject \def\@subject{Unspecified}  
\newcommand{\subject}[1]{\gdef\@subject{#1}}

\keywords \def\@keywords{Unspecified}  
\newcommand{\keywords}[1]{\gdef\@keywords{#1}}
9.9 Title page

Create the title page as per Registrar’s Rules. This includes the Table of Contents, List of Figures, List of Tables, and the Declaration.

\ifmadetitle First, define a switch that can be used if \maketitle is forgotten.

1218 \newif\ifmadetitle

\title Allow for an optional short (or unformatted) title

1219 \def\@@title{\relax}
1220 \renewcommand{\title}{[2]\[\relax]{%}
1221 \gdef\@title{#2}{%}
1222 \ifthenelse{\equal{#1}{\relax}}{%}
1223 \gdef\@title{#2}{%}
1224 \message{No short title}%
1225 }{%
1226 \gdef\@title{#1}{%
1227 \message{Short title: #1}%
1228 }%
1229 }

\maketitle The order is: title, subtitle, volume, author, qualifications, institution, college, faculty, department, degree, date, professor, supervisor, sponsor.

1230 \renewcommand\maketitle{%

We want this on a page by itself, centered both vertically and horizontally.

1231 \begin{titlepage}%
1232 \null
1233 \ifthesis\vfill\fi
1234 \begin{center}%

Title is compulsory: subtitle is optional.

1235 \if\@subtitle\relax\else\bigskip
1236 \else\LARGE\bfseries\fi\@title \par%
1237 \if\@subtitle\relax\else bigskip
Volume number is compulsory if the thesis is multi-volume.

Author is compulsory; qualifications are optional.

Any free space can also go here, above the UCC crest.

The name of the institution is required.

Use the preformed \@submission which reproduces those divisional elements which have been specified.
Grade of degree is compulsory. Phrasing for some degrees ‘in part fulfilment’ needs investigating.

```latex
\ifthesis
  \textbf{\large Thesis submitted for the degree of}
  \@degree\par
\else
  \large \@module~--- Minor Dissertation\par
\fi
\vspace*{1.5pc}\

Date of submission is required here for theses.

\ifthesis
  \@date \par
\vspace*{2pc}\\
\fi

If this is a thesis, give the Professor and Supervisor(s) as a tabular alignment.

\ifthesis
  \begin{tabular}{>{\raggedleft\arraybackslash}p{.45\textwidth} >{\raggedright\arraybackslash}p{.45\textwidth}}
    \text{} & \text{} \\
  \end{tabular}
\else
  Supervisor:\quad \@supervisor\par
\fi

Professor is actually optional here for some reason.

Multiple supervisors must have been separated by double backslashes, so we can use a 1-column table to make them format vertically.

\begin{tabular}{[t]@{}l@{}}
  \@supervisor
\end{tabular} \par \vfill

If this was not a thesis, just give the supervisor. This should probably be collapsed into the above formatting.
Date of submission is required here for dissertations.

Sponsor, if there is one.

Set the title page number to one and make sure it has no running header or footer.

Now reset the commands used to create the title page so that they can't accidentally be used again. Note that the stored values in the \@ remain unaffected for re-use in running headers, etc.
Set the footnote counter (back) to zero, establish Roman (lowercase) page numbering for the front matter, and set the numbering depth down to the subparagraph level, and the ToC depth down to the subsubsection.

As an integral part of the \maketitle command, do the Table of Contents immediately after the title page, as required by the Registrar’s rules; then do the List of Figures and List of Tables if they are needed.

The built-in internal command \@ifpackageloaded is used to detect the use of the glossaries package, and print the Glossary if appropriate.
Flag the title as having been done.

Finally, add the PDF metadata. Temporarily redefine the double backslash in case it gets used in the title, as \pdfinfo will gag on it and undefine \maketitle in the process.

\renewcommand{\}{ }
\pdfinfo{%
/Title (\@title)
/Author (\@author)
/CreationDate (\adobedate)
/Subject (\@subject)
/Keywords (\@keywords)
}}

\madedecl
If this is a thesis (ie not a term paper or essay), start a new page, set both marks to null, and output the Declaration.

\newif\ifmadedecl
\newcommand{\makedecl}{% 
  \ifthesis 
    \ifUCC@oneside\clearpage\else\cleardoublepage\fi
    \null\vfill\markboth{}{}% 
    \begingroup
    I, \@author, certify that this thesis is my own work and I have not obtained a degree in this university or elsewhere on the basis of the work submitted in this thesis. 
    \par\bigskip\flushright\textit{\@author}\par\endgroup 
    \vfill 
  \fi
  \global\madedecltrue
  \global\UCC@delaydeclfalse}

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9.10 General settings and redefinitions

This is a collection of changes (usually small) and additions (for convenience).

9.10.1 Floats

Reset the proportions of the page used for floats. This is taken from
http://www.tex.ac.uk/cgi-bin/texfaq2html?label=floats.

1373 \renewcommand{\topfraction}{.85}
1374 \renewcommand{\bottomfraction}{.7}
1375 \renewcommand{\textfraction}{.15}
1376 \renewcommand{\floatpagefraction}{.75}
1377 \renewcommand{\dbltopfraction}{.75}
1378 \renewcommand{\dblfloatpagefraction}{.75}
1379 \setcounter{topnumber}{9}
1380 \setcounter{bottomnumber}{9}
1381 \setcounter{totalnumber}{20}
1382 \setcounter{dbltopnumber}{9}

9.10.2 New front and back matter macros and environments

Firstly, a consistent way to provide a Dedication, Acknowledgements, and other preliminaries.

\begin{dedication}
\end{dedication}

The dedication environment is for dedicating a thesis. It creates a page on its own and does not make a ToC entry. If the title page has not yet been done, this will trigger it first.

1383 \newenvironment{dedication}{%
1384 \iftitle\else\maketitle\fi
1385 \iftitledesc\else\maketitledesc\fi
1386 \clearpage\null\vfill
1387 \thispagestyle{empty}%
1388 \begin{center}%%
1389 \end{center}\vfill
\texttt{\textbackslash prelim} The \texttt{\textbackslash prelim} command creates a minor frontmatter (unnumbered) section.

\verbatimcode{1390 \newif\ifUCC@delaydecl
1391 \newcommand{\prelim}{%
1392 \@ifnextchar \*
1393 {\UCC@delaydecltrue\UCC@prelim}
1394 {\UCC@delaydeclfalse\UCC@prelim{*}}}
1395 \newcommand{\UCC@prelim}{% dummy first arg
1396 \ifmadetitle\else\maketitle\fi
1397 \ifmadedecl\else
1398 \ifUCC@delaydecl\else\makedecl\fi
1399 \fi
1400 \ifUCC@oneside\clearpage\else\cleardoublepage\fi
1401 \section{*{#2}}\@mkboth{{#2}}{{#2}}%
1402 \addcontentsline{toc}{section}{#2}%
1403 \onehalfspacing}

\texttt{\textbackslash refsec} A \texttt{\textbackslash refsec} is a special form of \texttt{\textbackslash prelim} that does not trigger the Declaration, and is typeset single-spaced.

\verbatimcode{1404 \newcommand{\refsec}{[1]}%}
1405 \ifUCC@oneside\clearpage\else\cleardoublepage\fi
1406 \section*{#1}\@mkboth{#1}{#1}%
1407 \addcontentsline{toc}{section}{#1}%
1408 \singlespacing}

\texttt{\textbackslash ackname} Define a string for the titling of the Acknowledgements section, so that it can be redefined in the \texttt{\textbackslash gaeilge} option.

\verbatimcode{1409 \newcommand{\ackname}{Acknowledgements}}

\texttt{\textbackslash acknowledgements} The acknowledgements environment uses the \texttt{\textbackslash prelim} format.

\verbatimcode{1410 \newenvironment{acknowledgements}{%
1411 \ifmadetitle\else\maketitle\fi
1412 \ifmadedecl\else\makedecl\fi
1413 \prelim{\ackname}\singlespacing
1414 }%}

Redefine the Table of Contents as a section, and the same for the List of Figures and List of Tables.
The ToC is just a section, otherwise unchanged.

\renewcommand{\tableofcontents}{% 
\section*{\contentsname} \@mkboth{\contentsname}{\contentsname} \@starttoc{toc}%
}

LoF works the same as ToC

\renewcommand{\listoffigures}{% 
\ifUCC@oneside\clearpage\else\cleardoublepage\fi 
\section*{\listfigurename} \@mkboth{\listfigurename}{\listfigurename} \addcontentsline{toc}{section}{\listfigurename} \@starttoc{lof}%
}

And so does LoT

\renewcommand{\listoftables}{% 
\ifUCC@oneside\clearpage\else\cleardoublepage\fi 
\section*{\listtablename} \@mkboth{\listtablename}{\listtablename} \addcontentsline{toc}{section}{\listtablename} \@starttoc{lot}%
}

The Abstract is done slightly differently to normal for a page by itself.

We can’t use the titlepage environment, because it resets the page number, so we do it like all the other Prelims.

\renewenvironment{abstract}{% 
\ifmadetitle\else\maketitle\fi 
\ifmadedecl\else\makedecl\fi 
\ifUCC@oneside\clearpage\else\cleardoublepage\fi 
\@beginparpenalty\@lowpenalty 
\section*{\abstractname} \addcontentsline{toc}{section}{\abstractname} \markboth{\abstractname}{\abstractname} \onehalfspacing 
}{%
Lastly, the Index, if used.

Again, this is a section-level start, otherwise it uses the same format as the default. Possibly this should use the `multicol` package if people wanted balanced columns; but indexes are rare.

```
\renewenvironment{theindex}{% 
  \ifUCC@oneside\clearpage\else\cleardoublepage\fi 
  \columnseprule \z@ 
  \columnsep 35\p@ 
  \twocolumn[\section*{\indexname}]% 
  \@mkboth{\indexname}{\indexname}% 
  \parindent\z@ 
  \parskip\z@ \@plus .3\p@\relax 
  \let\item@\@idxitem}{} 
\endinput
```

We should have a closer look at the glossaries package to see if there is anything there needs redefining.

### 9.10.3 Sectioning commands

Make sure that `\parts` and `\chapters` switch to Arabic numbering and the appropriate stretch, because all the prelims are Roman.

`\part` Same as the default, but with a switch to Arabic page numbering and wide spacing if this is the first Part (resets the page number to 1).

```
\renewcommand\part{% 
  \ifmadetitle\else\maketitle\fi 
  \ifmadedecl\else\madedecl\fi 
  \if@openright 
  \cleardoublepage 
  \else 
  \clearpage 
  \fi 
  \fi
```

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9.10.4 Epigraphs and quotations

\@opttest To enable optional argument testing for the null string in Epigraphs (and later, in Quotations), we define a Plain TeX macro which sets the \ifoptarg switch.
Define an environment for Epigraphs. These would normally go immediate after the `chapter` command. This is basically the `quotation` environment modified, but it has to allow for either manual or automated citation (because it may just be a phrase needing no citation), whereas a normal quotation must be cited. It therefore has two arguments, described below:

```
\newenvironment{epigraph}[2][]{% 
  Record the argument values now, because they are needed in the end of the environment, so they have to pass across the group boundary. The compulsory argument is for a Bib\TeX citation key, so that a proper citation can be formatted; the optional argument is for when a pre-formed, ‘full’ (actually often simpler, non-rigorous) citation is wanted.

```
```
\gdef\@fullcite{#1} 
\gdef\@quotcite{#2} 
```

Like the default Quotation, this is done with a dummy `list` environment, but we add small italic type and no indentation.

```
\list{}{%
  \listparindent 1.5em%
  \itemindent \listparindent
  \rightmargin \leftmargin
  \parskip \z@ \@plus\p@%
  \item\relax
  \noindent\small\itshape\ignorespaces
```

Unlike the [redefined] `quotation` environment, a citation is compulsory here, even if it’s the default ‘Anon.’ The Bib\TeX citation can be empty if there was a manual one, otherwise it ought to be there.

```
{\unskip\nobreak\hfil\penalty50
\hskip2em\hbox{}\nobreak\hfil\upshape\footnotesize
\unskip\nobreak\hfil\penalty50
```

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If there is a manual citation (optional argument), use it before any Bib\TeX one:

```
\if\@fullcite\relax\else\@fullcite\fi
```

If the compulsory argument (Bib\TeX key) was empty (ie, just a pair of curly braces) \textit{and} there was no optional argument, print ‘Anon.’

```
\ifthenelse{\equal{\@quotcite}{}}{\if\@fullcite\relax(Anon.)\fi}{\if\@fullcite\relax\else\@fullcite\fi}\
```

Otherwise (compulsory argument was provided), test it to see if it contains an optional argument of its own (for example, a page number for a citation key), and \cite it accordingly.

```
\expandafter\@opttest\@quotcite\sentinel
\ifoptarg\expandafter\cite\@quotcite\else\cite{\@quotcite}\fi
```

Now terminate the paragraph so that the citation is fitted in, using the same code from the \texttt{memoir} class as used for the quotation environment below.

```
\parfillskip\z@\finalhyphenpenalty=0\par% 1513
\medskip 1514
\endlist\@afterheading%
```

See the user-level documentation for examples.

The Quotation environment is redefined similarly.
This positional code is taken from the \sourceatright command of the memoir class (thanks to Lee Rudolph and Robin Fairbairns for identifying this).

9.10.5 Odds ‘n' sods

This is mostly fixes and utilities.

Specify tighter letter-spacing for the title page.

Add more space around captions with the \abovecaptionskip and \belowcaptionskip commands.

Restyle the Table float to have the caption on top.
Restyle the Figure float to have the caption below.

Define a few experimental utilities.

Add a few bells and whistles to the hyphenation.
Enable semantic distinction of foreign words and phrases.

Define a new command for marginal notes.

Add a trace to the log file to help in cutting the PDF to separate sections.

The new \vstrut command which takes account of the surrounding font size has been moved to the documentation.

Last of all, establish 1½ line-spacing and a ragged page-bottom.
A Revised UCC Crest

This is the METAFONT crest written by Jeremy Gibbons for UCC in 1989, with the scroll commented out (look for the commented line saying `banner(j)`).

1601%% METAFONT program to draw University College, Cork coat of arms.
1602%%
1603%% Jeremy Gibbons, Oxford University, October 1989
1604%% Modified by JG (now at University of Auckland; jeremy@cs.auckland.ac.nz)
1606%%
1607%% There are now two "knobs" to adjust the appearance. One is called
1608%% "pen_knob", the other "banner_gap_knob". Search through this file
1609%% for the second occurrences of these strings, and play with the
1610%% settings as much as you like!
1611
1612designsize:=10pt#;
1613
1614def !! = scantokens ("input " & jobname); enddef;
1615
1616mode_setup;
1617
1618u# := .2pt#; define_pixels(u);
1619if unknown sections: sections := 1; fi
1620
1621banner_gap_knob := 8;
1622% Adjusting this affects the width of the gap between the top
1623% of the banner and the bottom of the shield. A setting of 0
1624% has them touching; a setting of 8 gives a gap of about 1mm
1625% when the whole shield is about 3cm high. You can set it to
1626% a floating-point number (eg 7.5).
1627
1628total_width# := 170u#; total_height# := 210u#;
1629total_depth# := (banner_gap_knob+1)*u#;
1630section_width# := total_width#;
1631
1632if sections > 1: % round so sections whole no of pixels wide
1633% SURPRISE: makes crests at different resolutions have different widths!
1634section_width# := (round((total_width#/sections)*hppp))/hppp;
1635% should be a whole no of pixels
1636total_width# := section_width# * sections;
1637fi
define_pixels(section_width, total_width, total_height, total_depth);

w := section_width; h := total_height; d := total_depth;

pen_knob := 1.5;

% Adjusting this affects the width of the "detailpen" (used for the
% castles, ship, book, lion and crowns). A setting of 1 was too fine
% at high resolutions; it was set at 2 for the 1989 version of the coat
% of arms. You can set it to a floating-point number (eg 1.5).

thickpenwidth#:4u#;
thinpenwidth#:u#;
detailpenwidth#:pen_knob * .5u#;
calligraphicpenwidth#:u#;
calligraphicpenheight#:0.1u#;
define_whole_blacker_pixels(thickpenwidth, thinpenwidth, detailpenwidth,
calligraphicpenwidth, calligraphicpenheight);

pickup pencircle scaled thickpenwidth; thickpen := savepen;
pickup pencircle scaled thinpenwidth; thinpen := savepen;
pickup pencircle scaled detailpenwidth; detailpen := savepen;

pickup pensquare
xscaled calligraphicpenwidth yscaled calligraphicpenheight
rotated 40; % a 'calligraphic' nib
calligraphicpen := savepen;

pickup pencircle; draftpen := savepen;
%% thickpen := draftpen; thinpen := draftpen;
%% detailpen := draftpen; calligraphicpen := draftpen;

def drawbothsides (expr p) =
draw p;
draw (p reflectedabout axis);
enddef;

def fillbothsides (expr p) =
fill p;
fill (p reflectedabout axis);
enddef;

def crown(suffix $) =
% (0,0) is centre of bottom edge of crown
```
1681 def axis = ((0,0),up) enddef;
1682
1683 z0$ = (-12u,0); % left end of bottom edge
1684 z1$ = z0$ + 6u*up; % left end of top of 'band' on crown
1685 z2$ = (-11u,0); % lower end of left edge of band
1686 z3$ = z2$ + 6u*up; % upper end ditto
1687 z4$ = (-16u, 23u); % point of lefthand spike
1688 z5$ = (-9u, 13u); % trough between left and centreleft spikes
1689 z6$ = (-7u, 25u); % point of centreleft spike
1690 z7$ = (-3u, 15u); % trough between centreleft and centre spikes
1691 z8$ = (0, 26u); % point of centre spike
1692
1693 pickup detailpen;
1694 drawbothsides(z3$--z4$--z5$--z6$--z7$--z8$); % spiky bit
1695 draw z0$ -- (z0$ reflectedabout axis); % bottom of band
1696 draw z1$ -- (z1$ reflectedabout axis); % top of band
1697 drawbothsides(z2$--(z2$+2u*up)); % lower halves of edges of band
1698 drawbothsides(z3$--(z3$-2u*up)); % ... and upper halves
1699 drawbothsides(unitsquare scaled 2u xscaled 2 shifted (z2$+(-2u,2u)));
1700 draw unitsquare scaled 2u xscaled 2 shifted (-2u,2u); % three rectangular jewels
1701 drawbothsides(fullcircle scaled 2u shifted (.5([0,0],z2$)+3u*up)); % and two circular jewels
1702 enddef;
1703
1704 def shield(suffix $) =
1705 z0$ = (.5total_width, 30u); % centre bottom
1706 z1$ = (50u, 37.5u); % ... 
1707 z2$ = (3u, 85u); % up the left hand side
1708 z3$ = (13u, 147u); % ... 
1709 z4$ = (3u, 188u); % top left (sw of diagonal line)
1710 z5$ = (22u, 207u); % top left (ne of diagonal line)
1711 z6$ = (52u, 200u); % ... across top ...
1712 z7$ = (.5total_width, 205u); % centre top
1713 def axis = (z0$,z0$+total_height*up) enddef; % axis of symmetry of shield
1714 path shieldleft;
```
shieldleft = z0$\langle$dir 135$\rangle$..z1$\langle$left$\rangle$..z2$\langle$up$\rangle$..z3$\langle$up$\rangle$..{dir 135$}\rangle$

z4$\langle$--z5$angle$

{dir -30$\rangle$..z6$\langle$right$\rangle$;

% y8$\langle$ = 138u; z8$\langle$ = shieldleft intersectionpoint ((0,y8$\langle$)--(total_width,y8$\langle$);
z8$\langle$ = shieldleft intersectionpoint ((0,138u)--(total_width,138u));

% left edge of horiz dividing line
y9$\langle$ = 134u; x9$\langle$ = x0$\langle$; % top of gap for book in vert dividing line
y10$\langle$ = 103u; x10$\langle$ = x0$\langle$; % bottom of gap ...

pickup thickpen;
draw ( shieldleft .. z7$\langle$ .. (reverse shieldleft reflectedabout axis) )

draw z8$\langle$ -- (z8$\langle$ reflectedabout axis) ; % horiz dividing line
draw (.5[z8$\langle$,z8$\langle$ reflectedabout axis])--z9$\langle$; % top of vert dividing line
draw z10$\langle$ -- z0$\langle$; % ... and bottom

enddef;
def book(suffix $) =

z0$\langle$ = (0,0); % centre of base of spine
def axis = (z0$\langle$, z0$\langle$ + up) enddef; % up the spine

z1$\langle$ = (-2.5u,0); % left edge of ellipse at base of spine
z2$\langle$ = (-20u,0); % bottom left hand corner of cover
z3$\langle$ = (-19u,19u); % top left corner of cover
y5$\langle$ = 18u; z5$\langle$ = whatever[z2$\langle$,z3$\langle$];

% top left corner of page 1
z6$\langle$ = z2$\langle$ + (4u*(up+right))); % bottom left corner of lefthand open page
z7$\langle$ = z5$\langle$ + (z6$\langle$--z2$\langle$)); % ... and top left
z8$\langle$ = (-6u, 4u); % centre of bottom edge of lh open page
z9$\langle$ = (0, 1.5u); % bottom right of lh open page

path bottomleftofpages; bottomleftofpages = z2$\langle$dir 40$\rangle$..z6$\langle$dir 60$\rangle$;
y4$\langle$ = y3$\langle$;
z4$\langle$ = (bottomleftofpages shifted (z5$\langle$--z2$\langle$))

intersectionpoint (z3$\langle$--(z3$\langle$ reflectedabout axis))

% where top of book cover goes behind pages

y10$\langle$ = 4u; z10$\langle$ = whatever[z2$\langle$,z3$\langle$]; % lower left flap
y11$\langle$ = y10$\langle$; x11$\langle$ = -29u;
y12$\langle$ = y11$\langle$ + 4u; z12$\langle$=z11$\langle$+whatever*(z3$\langle$--z2$\langle$)}
y13$ = y12$; z13$ = whatever[z2$, z3$];
y14$ = 12u; z14$ = whatever[z2$, z3$]; % upper left flap
y15$ = y14$; z15$ = whatever[z11$, z12$]; % z15--z16 in line with z11--z12
y16$ = y15$+(y12$-y11$); z16$ = whatever[z11$, z12$];
y17$ = y16$; z17$ = whatever[z2$, z3$];
z18$ = z11$ + 3u*right; z19$ = z18$+(z12$-z11$);
% vert line on lower flap
z21$ = z20$+(z8$-z9$); % middle of top of left open page
z20$ = z9$+(0,y7$-y6$); % top of spine
pickup detailpen;
drawbothsides(z1$--z2$--z3$--z4$); % cover
drawbothsides(bottomleftofpages);
drawbothsides((bottomleftofpages shifted (z5$-z2$))); % top of pages
drawbothsides(z9${dir 135}..z8${left}..z6${dir 150});
drawbothsides(z10$--z11$--z12$--z13$); % lower flap
drawbothsides(z14$--z15$--z16$--z17$); % upper flap
fillbothsides(unitsquare scaled u shifted .5[z18$, z19$] shifted
    (u*left+.5u*down));
% catch on lower flap
fillbothsides(unitsquare scaled u shifted .5[z18$, z19$]
    shifted (u*left+.5u*down) shifted (z15$-z11$));
% catch on upper flap
draw fullcircle xscaled 5u yscaled 3u; % ellipse at base of spine
draw z9$--z20$; % spine
draw z18$--z19$; % vert line on lower flap
draw (z18$--z19$) shifted (z15$-z11$); % ... and on upper flap
def castle(suffix $) =
z0$ = (0, 0);
def axis = (z0$, z0$ + up) enddef; % up the middle
z1$ = (0, 6u); % top of doorway
\begin{verbatim}
z17$ = (-2u,4u); % bottom left of door archway
z2$ = (-2u,0); % bottom left of doorway
z3$ = (-9u,0); % bottom left
z4$ = z3$ + 7u*up; % left bottom of band round castle
z5$ = z4$ + 6u*right; % end of band
z7$ = z4$ + (-2u,2u); % left edge of band
z8$ = z4$ + 4u*up; % left top of band
z9$ = (-7u,33u); % top of body
z10$ = z9$ + (-u,2u); % bottom of battlements
z11$ = z10$ + u*left; % bottom left of battlements
z12$ = z11$ + (-2u,6u); % top left
z13$ = z12$ + 4u*right; % top right of lb battlement
z14$ = z13$ + (u,-3u); % bottom left of lb gap
z15$ = z14$ + 3u*right; % bottom right
z16$ = z15$ + 3u*up; % top left of middle battlement
pickup detailpen;
drawbothsides(z1${left}..{down}z17$--z2$--z3$--z4$); % lower floor
drawbothsides(z5$--z4$..z7$..z8${right});
draw z8$--(z8$ reflectedabout axis); % band
drawbothsides(z8$--z9$--z10$); % upper floor
draw z9$--(z9$ reflectedabout axis); % top of top floor
drawbothsides(z11$--z12$--z13$--z14$--z15$--z16$); % battlements
draw z11$--(z11$ reflectedabout axis); % bottom of battlements
draw z16$--(z16$ reflectedabout axis); % top of middle battlement
drawbothsides(unitsquare scaled 3u yscaled 2.5 shifted (-5u,14u)); % lower windows
draw unitsquare scaled 3u yscaled 2.5 shifted (-1.5u,24u); % upper window
drawbothsides(unitsquare scaled 3u yscaled 2.5 shifted (-5u,14u)); % lower floor

enddef;
def ship (suffix $) =
z0$ = (0,0);
def axis = (z0$, z0$ + up) enddef; % up the middle
z1$ = (-22u,9u); % front of the hull
z2$ = (-10u, 0); % front of the keel
z3$ = (10u, 0); % back of the keel
z4$ = (14u, u); % further back on the keel
z5$ = (16u, 10u); % back of the hull
\end{verbatim}
\begin{verbatim}
1853  z6$ = z1$ + 2u*right;
1854  z7$ = (-7u, 2u); \% lower deck
1855  z8$ = (5u, 2u);
1856  x9$ = x1$; y9$ = y10$;
1857  z10$ = (-25u, 11u); \% bottom of bowsprit
1858  z11$ = z10$ + 2u*up; \% top deck...
1859  z12$ = z11$ + 15u*right;
1860  z13$ = z12$ + (4u, 3u);
1861  z14$ = z13$ + 13u*right;
1862  z15$ = z14$ + (4u, 3u);
1863  z16$ = z15$ + 10u*right;
1864  z17$ = x16$; y17$ = y5$;
1865  z18$ = z17$ + (-13u, -2u);
1866  z19$ = z18$ + 15u*left;
1867  x20$ = x19$ - 9u; y20$ = y10$;
1868  z29$ = (-15u, 23u);
1869  z30$ = z29$ + (28u, 14u); \% 'crossbar' for sail
1870  z25$ = .05[z29$, z30$];
1871  z26$ = .15[z29$, z30$] + (2u, -2u);
1872  z27$ = .75[z29$, z30$] + (2u, -2u);
1873  z28$ = .95[z29$, z30$];
1874  path lsail, msail, rsail; \% three parts of sail
1875  rsail = z27${dir -45}..{(z30$-z29$) rotated 90}z28$;
1876  msail = z26${dir -45}..tension 1.4..(point .25 of rsail);
1877  lsail = z25{$(z30$-z29$) rotated -90}..(point .08 of msail);
1878  x21$ = -u; y21$ = y13$; \% bottom left of mast
1879  x23$ = u; y23$ = y21$; \% bottom right
1880  x22$ = -.5u; z22$ = ((x22$, 0)--(x22$, h)) intersectionpoint msail; \% top left
1881  x24$ = .5u; z24$ = ((x24$, 0)--(x24$, h)) intersectionpoint msail; \% top right
1882  x31$ = 0; z31$ = whatever[z29$, z30$];
1883  z32$ = z31$ + 10u*up; \% flagpole
1884  z33$ = .7[z31$, z32$] + 10u*left; \% tip of flag
1885  pickup detailpen;
1886  draw z1${right}..{right}z2$--z3${right}..z4$; draw z4${up}..z5$; \% keel
1887  draw z9$--z1$--z6${right}..{right}z7$--z8$..z5$; \% lower deck
1888  draw z10$--z11$--z12${right}..{right}z13$--z14$..z15$--z16$--
1889  z17$--z5${left}..(left)z18$--z19${left}..(left)z20$-- cycle; \% top deck
1890
1891
1892
1893
1894
1895
\end{verbatim}
def oar (expr p) =
    draw (p+1.5u*left){dir 60}..{dir -60}(p+1.5u*right);
    draw p--(p+(5u,-9u));
enddef;

oar((-8u,5u));
oar((-3u,5u));
oar((2u,5u));
oar((7u,5u));
draw z21$--z22$; draw z23$--z24$; % mast

draw lsail; draw msail; draw rsail;
draw z29$--z30$; % 'crossbar' for mast

draw z31$--z32$; % flagpole
draw (.2[z31$,$z32$])(dir 120)..z33${dir 120};
draw (.8[z31$,$z32$])(dir 135)..z33${dir 135}; % flag
enddef;

def lion (suffix $) =
    path lowermanea, lowermaneb, lowermanec;
    lowermaneb = flex( (5u, 28u), (3u, 26u), (3u, 23u) ) &
        flex( (3u, 23u), (4u, 24u), (5u, 24u), (7u, 26u) ) &
        flex( (7u, 26u), (6u, 24u), (7u, 22u) ) &
        flex( (7u, 22u), (8u, 24u), (9u, 24u) ) &
        flex( (9u, 24u), (7.5u, 21u), (8u, 19u) ) &
        flex( (8u, 19u), (10u, 21u), (12u, 22u) );
    lowermanea = flex( (4u, 33u), (2u, 31u), (2u, 30u), (u, 29u) ) &
        flex( (u, 29u), (2u, 28u), (4u, 29u) ) &
        flex( (4u, 29u), (3u, 27u), (point .8 of lowermaneb) );
    lowermanec = flex( (14u, 23u), (13u, 20u), (14u, 17u) ) &
        flex( (14u, 17u), (15u, 19u), (18u, 21u), (18u, 23u) ) &
        flex( (18u, 23u), (19u, 21u), (20u, 21u), (21u, 20u) ) &
        flex( (21u, 20u), (20u, 22u), (22u, 24u), (20u, 26u) ) &
        flex( (20u, 26u), (21u, 25.5u), (23u, 26.5u), (25u, 26u) ) &
        flex( (25u, 26u), (24u, 27u), (23u, 29.5u), (22u, 30u) ) &
        flex( (22u, 30u), (23u, 30u), (24u, 31.5u), (25u, 31u) ) &
        flex( (25u, 31u), (24.5u, 31.5u), (24u, 33u), (22u, 33u) ) &
        flex( (22u, 33u), (24u, 34u), (26u, 36u), (27u, 36u) ) &
        flex( (27u, 36u), (24u, 36.5u), (23u, 38u) );
    path uppermane, rightear;
rightear = (20u, 45u) -- (21.5u, 46.5u) --
flex( (21u, 44u), (23u, 44.5u), (25u, 42.5u), (26u, 42.5u) ) &
flex( (26u, 42.5u), (24u, 42u), (22u, 40u), (20u, 41u) );
uppermane = (6u, 45u) -- (4u, 46u) --
flex( (5u, 44u), (4u, 44u), (0, 43u) ) &
flex( (0, 43u), (2u, 41u), (3u, 39u), (5u, 39u) ) &
flex( (5u, 39u), (3u, 37u), (3u, 34u) ) &
flex( (3u, 34u), (4.5u, 36u), (5u, 35.5u) ) &
flex( (5u, 35.5u), (4u, 33u), (5u, 30u) ) &
flex( (5u, 30u), (6u, 31.5u), (7u, 32u) ) &
flex( (7u, 32u), (7u, 30u), (8u, 26u) ) &
flex( (8u, 26u), (8.5u, 28u), (10u, 30u) ) &
flex( (10u, 30u), (10u, 28u), (11u, 27u), (11u, 26u) ) &
flex( (11u, 26u), (12u, 28u), (14u, 28u), (14u, 30u) ) &
flex( (14u, 30u), (15u, 28.5u), (14u, 27u) ) &
flex( (14u, 27u), (16u, 28.5u), (17u, 31u) ) &
flex( (17u, 31u), (18u, 30u), (18u, 29u) ) &
flex( (18u, 29u), (19u, 32u), (18u, 34u) ) &
flex( (18u, 34u), (19.5u, 33u), (20u, 32u) ) &
flex( (20u, 32u), (20, 35u), (19, 36u) ) &
flex( (19, 36u), (21, 36u), (23, 35u) ) &
flex( (23, 35u), (23, 36u), (21u, 38u), point 7 of rightear );
path leftfrontleg;
leftfrontleg =
flex( point 2.8 of lowermanec, (19u, 12u), (20u, 6u) ) &
flex( (20u, 6u), (18u, 4.5u), (14u, 4.5u), (16u, 3u) ) &
flex( (16u, 3u), (16u, u), (19u, 3u) ) &
flex( (19u, 3u), (20u, .5u), (22u, 2u), (24u, 2u), (24u, 6u), (26u, 7u) ) &
flex( (26u, 7u), (25u, 7.5u), (24u, 7u) ) &
flex( (24u, 7u), (24.5u, 8u), (26u, 9u) ) &
flex( (26u, 9u), (25u, 10u), (23u, 11u) ) &
flex( (23u, 11u), (25u, 11.5u), (26u, 11u) ) &
flex( (26u, 11u), (23u, 15u), (25u, 18u) ) &
flex( (25u, 18u), (23u, 19u), (23u, 21u) );
path rightfrontmidtoe;
rightfrontmidtoe = flex( (5u, 4u), (3u, 5u), (2u, 2u) ) ... (right)(6u, 3u);
path rightfrontlega, rightfrontlegb;
rightfrontlega =
flex( point 12.5 of lowermaneb, (10u, 10u), (6u, 7u) ) &
flex( (6u, 7u), (2u, 7u), point 1 of rightfrontmidtoe );
rightfrontlegb =
- flex( (6u, 3u), (6u, 0), (9u, 3u), (11u, 2u), (12u, 6u), (13u, 5u) ) &
- flex( (13u, 5u), (13.5u, 6.5u), (13u, 8u) ) &
- flex( (13u, 8u), (14u, 8.5u), (16u, 7.5u) ) &
- flex( (16u, 7.5u), (16u, 9u), (15u, 11u) ) &
- flex( (15u, 11u), (16u, 11u), (17u, 10u) ) &
- flex( (17u, 10u), (16.5u, 11.5u), point .6 of leftfrontleg );

path riba, ribb, ribc, ribd;
riba = flex( point 21.7 of leftfrontleg, (26u, 18u), (27u, 21u) );
ribb = flex( point .7 of riba, (28u, 18u), (30u, 21u) );
ribc = flex( point .5 of ribb, (31u, 19u), (33u, 22u) );
ribd = flex( point .7 of ribc, (33u, 18.5u), (36u, 21u), (39u, 22u) );

path leftrearlega, leftrearlegb;
leftrearlegb =
- flex( (58u, 3u), (58u, u), (59u, 2u), (63u, 2u), (64u, 6u), (66u, 7u) ) &
- flex( (66u, 7u), (64u, 9u), (66u, 11u) ) &
- flex( (66u, 11u), (64u, 12u), (66u, 13u) ) &
- flex( (66u, 13u), (64u, 14u), (62u, 13u) ) &
- flex( (62u, 13u), (61u, 15u), (62u, 17u) ) &
- flex( (62u, 17u), (60.5u, 16u), (60u, 14u) ) &
- flex( (60u, 14u), (56.5u, 17u), (55u, 26u), (52u, 26u) );
leftrearlega =
- flex( (38u, 24u), (45u, 18u), (43u, 14u) )
- (47.5u, 16u)--(47u, 14u)--
- flex( (49u, 15u), (49u, 13u), (50u, 11u) ) --
- flex( (50u, 15u), (52u, 13u), (55u, 12u) ) ..
- flex( (60u, 8u), (59u, 7u), (55u, 7u), (56u, 5u) ) &
- flex( (56u, 5u), (54.5u, 3.5u), point .45 of leftrearlegb );

path rightrearleg;
rightrearleg =
- (point 1.6 of ribd) --
- flex( (35u, 17u), (33.5u, 15u), (33.5u, 13.5u) ) &
- flex( (35u, 13.5u), (35u, 15.5u), (36u, 16u) ) &
- flex( (36u, 16u), (35u, 14u), (36u, 12u) ) &
- flex( (36u, 12u), (36u, 13u), (37u, 15u) ) &
- flex( (37u, 15u), (42u, 10u), (39u, 6u) ) ..
- flex( (36u, 7u), (34u, 6u), (36u, 4.5u) ) &
- flex( (36u, 4.5u), (33u, 4.5u), (35u, 3u) ) &
- flex( (35u, 3u), (35u, -.5u), (38u, 2u), (39u, u), (43u, 3u), (43u, u) ) &
- flex( (43u, u), (44u, 2u), (45u, 5u) )
def axis = ((13u,0), (13u,1)) enddef;

pickup detailpen;

% Head:
draw lowermanea; draw lowermaneb; draw lowermanec;
draw flex( (19u, 25u), (20u, 24.5u), (20.5u, 24u) );
% draw uppermane; draw flex( (4u, 41u), (5u, 42u), (2u, 42u) );
draw rightear; draw flex( (21u, 42u), (21u, 43u), (23u, 43u) );
% draw flex( (6u, 41u), (6u, 39u), (7u, 38u), (7u, 36u) ); % cheeks
draw flex( (19u, 40u), (19.5u, 39u), (18u, 37u), (18.5u, 36u) );
% drawbothsides( flex( (6u, 43u), (8u, 42u), (10u, 42.5u), (12u, 41u) )
& flex( (12u, 41u), (11u, 41u), (8u, 40.5u), (7u, 42u) ) );
drawbothsides( fullcircle scaled u shifted (9.5u,41.25u) ); % eyes
% draw (13u,42u)--(13u,43u); % line on forehead
% draw (10u, 39u){dir -120}..(13u, 36u){right}..{dir 120}(16u, 39u);
draw flex( (12u, 39u), (13u, 37.5u), (14u, 39u) ); % nose
% path tongue; tongue = flex( (11.5u,36u), (11.5u, 35u), (13u, 31u) );
drawbothsides( flex( (10u, 37u), (10.5u, 35u), point 1.5 of tongue ));
drawbothsides( tongue );
draw (13u, 36u)--(13u, 35u); % mouth
% drawbothsides( (11u, 34u)--(8.5u, 35u) );
% drawbothsides( (11u, 33u)--(9u, 32u) ); % whiskers?

% Crown:
draw (7u,44u)--((7u,44u) reflectedabout axis); % band
drawbothsides( unitsquare scaled u xscaled 2 shifted (6.5u, 45u) );
drawbothsides( fullcircle scaled u shifted (10u, 45.5u) );
draw unitsquare scaled u xscaled 2 shifted (12u, 45u);
draw (7u,47u)--((7u,47u) reflectedabout axis);
drawbothsides((7u,47u)--(4u,50u)) &
flex( (6u,49u), (5u,50.5u), (6u, 51u) ) &
flex( (6u, 51u), (5.5u, 52.5u), (7u, 52u) ) &
flex( (7u, 52u), (7.25u, 53.5u), (8.5u, 53u) ) &
flex( (8.5u, 53u), (9.75u, 54u), (11u, 53u) ));
drawbothsides(flex( (7u, 49u), (8u, 52u), (12u, 51u) ));

% draw fullcircle scaled 2u shifted (13u, 52u);
draw unitsquare scaled 2u yscaled .7 shifted (12u,49u);
draw unitsquare scaled u xscaled 4 shifted (11u, 48u);
path partofjewel;
partofjewel = flex( (12.5u, 55u), (13u, 53u), (13.5u, 55u) );
partofjewel := partofjewel--(partofjewel rotatedaround ((13u, 55.5u), 90));
draw partofjewel--(partofjewel rotatedaround ((13u, 55.5u), 180));
drawbothsides(unitsquare scaled u rotated 45 yscaled 1.5 shifted (9u,48u));

% draw leftfrontleg;
draw subpath (0,4+xpart ((subpath(4,5-eps) of leftfrontleg)
intersectiontimes
(subpath(5+eps,6) of leftfrontleg)))
of leftfrontleg;
draw subpath (5,6+xpart ((subpath(6,7-eps) of leftfrontleg)
intersectiontimes
(subpath(7+eps,8) of leftfrontleg)))
of leftfrontleg;
draw flex( point 4.3 of leftfrontleg, (12u, 2u), (12.5u, .5u) ) &
flex( (12.5u, .5u), (13u, 2u), point 4.6 of leftfrontleg );
draw flex( point 5.5 of leftfrontleg, (14u, .5u), (15u, -.5u) ) &
flex( (15u, -.5u), (15u, .5u), point 6 of leftfrontleg );
draw flex( point 7.5 of leftfrontleg, (17u, 0u), (18u, -u) ) &
flex( (18u, -u), (18u, -0u), point 7.8 of leftfrontleg );
draw rightfrontlega;
draw subpath (0,xpart (rightfrontmidtoe intersectiontimes
(subpath (eps, infinity) of rightfrontlegb)))
of rightfrontmidtoe;
draw rightfrontlegb;
draw flex( point 3 of rightfrontlega, (.3u, 6u), (0,4u) ) &
flex( (0,4u), (u, 5u), point 3.5 of rightfrontlega );
draw flex( point 1.4 of rightfrontmidtoe, (0.3u, 2.2u), (0u, .5u) ) &
flex( (0u, .5u), (.7u, 1.8u), point 2 of rightfrontmidtoe );
draw flex( point .5 of rightfrontlegb, (3u, u), (3u, -u) ) &
def banner(suffix $) =
def axis = ((.5total_width, 0), (.5total_width,0)+up) enddef;

path upperedge,loweredge;
upperedge =
((15u,49u){curl 0}..tension 2..(7u,52u)..tension 4..(43u,32u)
  ..tension 4..(10u,30u)..tension 4 and 1..{right}(.5total_width,15u))
shifted (banner_gap_knob * u*down);
loweredge =
(( 9u,39u){curl 0}..tension 2.. (u,42u)..tension 4..(39u,21u)
  ..tension 4..( 6u,19u)..tension 4 and 1..{right}(.5total_width,u))
shifted (banner_gap_knob * u*down);

pair intersectA, intersectB;
intersectA = ((subpath (1,2) of loweredge) intersectiontimes
  (subpath (2,3) of upperedge)) + (1,2);
intersectB = ((subpath (2,3) of loweredge) intersectiontimes
  (subpath (3,4) of upperedge)) + (2,3);

pickup thinpen;
drawbothsides (((point 0 of loweredge)--(point 0 of upperedge))
  intersectionpoint (subpath (1,infinity) of upperedge))
-- point 0 of upperedge);
drawbothsides (subpath (0,2) of upperedge);
drawbothsides (subpath (ypart intersectA,4) of upperedge);
drawbothsides (subpath (1,xpart intersectB) of loweredge);
drawbothsides (subpath (3.06,4) of loweredge);
def dent (expr za,zb,delta) =
  (.5[za,zb] + delta * (unitvector(zb-za) rotated 90))
enddef;
def wiggle (expr p,q,delta) =
(subpath (length p,2+length p) of
     (p...dend(point (length p) of p, point 0 of q,delta)...q))
enddef;
drawbothsides
    (wiggle ((subpath (0,1) of upperedge),(subpath (1,2) of loweredge),.5u));
drawbothsides
    (wiggle ((subpath (1,2) of upperedge),(subpath (2,3) of loweredge),-.5u));
drawbothsides
    (wiggle ((subpath (2,3.06) of upperedge),(subpath (3.06,4) of loweredge),

def diagfoot(expr base, dirn) =
    draw base+u*left -- base+.5u*right;
    draw base+u*left{right}..{dirn}base+u*dir angle dirn;
enddef;
def foot(expr base) =
    diagfoot(base, up);
enddef;
def diaghook(expr topofstem, dirn) =
    draw topofstem-u*dir 30 -- topofstem;
    draw topofstem-u*dir 30{dir 30}..{dirn}topofstem+u*dir angle dirn;
enddef;
def hook(expr topofstem) =
    diaghook(topofstem, down);
enddef;
def vertstem(expr base) = % for F, I, H, R
    foot(base);
    draw base -- base+lh*up;
    hook(base+lh*up);
enddef;
def crossbar(expr leftend, straightlength) =
    draw leftend -- leftend+straightlength*right {right}..
    {dir 30}leftend+(straightlength+u)*right + .5u*dir 45;
enddef;
def upperbowl(expr bl, midht) = % for B, R
    draw bl+.8lh*up{dir 30} .. bl+lh*up+2u*right ..
    bl+(midht+u)*up+3u*right..{left}bl+midht*up;
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enddef;

def SEdiagwithtail(expr nw, se) = % eg R
draw nw{se+.5u*left-nw} .. se .. se+.3u*dir 45;
enddef;

def SEdiagwithtwotails(expr nw, se) = % eg A, N
draw nw+u*-dir 30 .. nw
... (se+.5u*left-(nw+.5u*right)}.5[nw,se] ...
se .. se+u*dir 30;
enddef;

numeric letterspacing; letterspacing = 2.6u;

def letter (expr c) =
% this big case statement is a bit grotty, but a better way doesn’t
% spring to mind...
if c = ASCII "A":
SEdiagwithtwotails(lh*up+2u*right, 5u*right);
draw (0,0)--lh*up+2u*right;
diagfoot((0,0),lh*up+2u*right);
crossbar(.4[(0,0),lh*up+2u*right], 2.5u);
width(letterspacing+5u);

elseif c = ASCII "B":
vertstem((0,0));
upperbowl((0,0), .5lh);
draw .5lh*up{right} .. .2lh*up+3.5u*right .. {left}(0,0);
width(letterspacing+3u);

elseif c = ASCII "E":
crossbar((0,0), 2u);
vertstem((0,0)); % next four lines same as an "F"
crossbar(.5lh*up, u);
draw .8h*up{dir 30} .. 1h*up+2u*right .. .8h*up+3u*right;
width(letterspacing+3u);

elseif c = ASCII "F":
vertstem((0,0));
crossbar(.5l*h*up, u);
draw .8h*up{dir 30} .. 1h*up+2u*right .. .8h*up+3u*right;
width(letterspacing+3u);
elseif c = ASCII "G":
  draw 4u*right+(lh-u)*up .. 3u*right+lh*up ..
  .5lh*up .. 2u*right .. 4u*right+.51h*up;
  draw 4u*right -- 4u*right+.51h*up -- 3u*right+.51h*up;
  width(letterspacing+4u);

elseif c = ASCII "H":
  vertstem((0,0));
  vertstem(3.5u*right);
  crossbar(.5lh*up, 3u);
  width(letterspacing+3.5u);

elseif c = ASCII "I":
  vertstem((0,0));
  width(letterspacing+u);

elseif c = ASCII "L":
  vertstem((0,0));
  crossbar((0,0), 2u);
  width(letterspacing+3u);

elseif c = ASCII "M":
  diagfoot((0,0), lh*up+.5u*right);
  draw (0,0) -- lh*up+.5u*right;
  SEdiagwithtwotails(lh*up+.5u*right, 3.5u*right);
  draw 3u*right+.5u*up -- 5u*right+lh*up -- 6u*right+lh*up;
  draw 5u*right+lh*up -- 6u*right;
  diagfoot(6u*right, 1h*up-u*right);
  width(letterspacing+6u);

elseif c = ASCII "N":
  foot((0,0));
  draw (0,0)--.85lh*up;
  SEdiagwithtwotails(lh*up+u*left, 4u*right);
  draw 4u*right -- 4u*right+.8lh*up ..
  3u*right+lh*up(left) -- 3u*right+lh*up+u*-dir 60;
  width(letterspacing+4u);

elseif c = ASCII "R":
  vertstem((0,0));
  upperbowl((0,0), .41h);
  SEdiagwithtail(.41h*up+u*right, 4u*right);
  width(letterspacing+3.5u);
elseif c = ASCII "S":
    draw 4u*right+(lh-u)*up-.5u*dir 45 --
    4u*right+(lh-u)*up .. {left}2u*right+lh*up ..
    (lh-2u)*up .. 4u*right+2u*up ..
    (left)2u*right .. u*up
    -- u*up+.5u*dir 45;
    width(letterspacing+3.5u);

elseif c = ASCII "T":
    foot(2.5u*right);
    draw 2.5u*right -- 2.5u*right+lh*up;
    draw u*right+(lh-2u)*up(dir 135) .. (lh-u)*up ..
    {right}2u*right+lh*up -- 5u*right+lh*up;
    width(letterspacing+4u);

elseif c = ASCII "U":
    hook(lh*up);
    draw lh*up{down} -- .4lh*up{down} ..
    2u*right(right) -- 3.5u*right+u*up;
    hook(3.5u*right+1h*up);
    draw 3.5u*right+1h*up -- 3.5u*right -- 3.5u*right+.5u*dir 20;
    width(letterspacing+4u);

elseif c = ASCII "W":
    draw lh*up -- 2u*right -- .3[3u*right+lh*up,5u*right];
    draw 3u*right+1h*up -- 5u*right;
    draw 5u*right(dir 60) .. {left}5u*right+1h*up
    -- 5u*right+1h*up + .5u*dir 30;
    diaghook(lh*up, 2u*right-lh*up);
    diaghook(3u*right+1h*up, 2u*right-lh*up);
    width(letterspacing+6u);

elseif c = ASCII " ":
    width(letterspacing+0); % used to be +1.5u, but that was too slack

elseif c = ASCII "/":
    width(-.5u); % small kern

fi;
enddef;

% pathtext takes theword (a string) and draws it with a baseline that
% follows the path (roughly). Probably won’t work for intricate paths,
% but fine for smooth shallow curves.
def pathtext (expr theword, thepath) =
  % width advances the time, so that the next letter will go in the right
  % place on the path. Works by intersecting the path with the ‘vertical’
  % line at the right of the character.
def width(expr wid) =
  thetime := xpart (thepath intersectiontimes
  (((wid,-infinity)--(wid,infinity))
  transformed currenttransform));
def scaffold (expr theoffset, thetime) =
  if thetime <= 4:
    offset(theoffset,thetime,loweredge)
  else:
    (direction thetime of loweredge)
numeric lh; lh = 6u; % letter height
offset (theoffset, (thetime-4), reverse (loweredge reflected about axis))
(direction (thetime-4) of reverse (loweredge reflected about axis))
fi
enddef;

thetextpath =
(scaffold(3.15u,3.32) ... scaffold(3.2u,3.6) ... scaffold(3.25u,4) ... scaffold(3.2u,4.4) ... scaffold(3.15u,4.68)) shifted (u*up);
pathtext ("FINBARR T/A/U/GHT L/E//T MUNSTER", thetextpath);
pathtext ("LEARN",
subpath (2.25,3) of reverse (loweredge reflected about axis)
shifted (3.15u*dir (90 + angle direction 2.5 of
reverse (loweredge reflected about axis))));
enddef;

transform tfm;
tfm := currenttransform;
currenttransform := tfm; % shield(a);
currenttransform := tfm shifted (round 106u, round 79u); crown(b);
currenttransform := tfm shifted (round 144u, round 79u); crown(c);
currenttransform := tfm shifted (round 125u, round 48u); crown(d);
currenttransform := tfm shifted (.5total_width, 109u); book(e);
currenttransform := tfm shifted (132u, 148u); castle(f);
currenttransform := tfm shifted (total_width-132u,148u); castle(g);
currenttransform := tfm shifted (.5total_width,151u); ship(h);
currenttransform := tfm shifted (15u,57u); lion(i);
currenttransform := tfm;

picture crest_picture; cullit; % crest_picture := currentpicture;
crest_picture := nullpicture; addto crest_picture also currentpicture;
clearit;
fill unitsquare xscaled (section_width+4u)
yscaled (total_height+(banner_gap_knob+1)*u)
shifted (2u*left+(banner_gap_knob+1)*u*down);
picture mask; cullit; mask = currentpicture;
for code := 1 upto sections:
\hspace{1cm}beginchar(code, section_width#, total_height#, total_depth#); "UCC Arms";
currentpicture := crest_picture shifted ((code-1)* -section_width,0);
\hspace{1cm}addto currentpicture also mask; cull currentpicture keeping (2,2);
endchar;
endfor
end
This is the \texttt{uccnew.sty} style package for the UCC crest implemented as a character in a \texttt{METAFONT} font outline.

\verbatimverbatim
\NeedsTeXFormat{LaTeX2e}[2009/09/24]
\ProvidesPackage{ucccrest}[2014/05/30 v1.19 LaTeX style file for the UCC crest]

This is the \texttt{uccnew.sty} style package for the UCC crest implemented as a character in a \texttt{METAFONT} font outline.

\verbatimverbatim
\fileversion{2.0}
\filedate{2012/11/22}
\docdate{2013/07/06}
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{ucccrest}[\filedate\space\fileversion\space UCC 2013 crest font MFNFSS2e package]
\RequirePackage[U]{fontenc}
\newcommand{\UCCcrest}{\fontencoding{U}\fontfamily{zcc}\selectfont\char'001}
\verbatimverbatim
C  UCC crest font definition file

\ProvidesFile{uzcc.fd}
\[2000/03/23 UCC crest definitions for U/zcc.\]
\DeclareFontFamily{U}{zcc}{}
\DeclareFontShape{U}{zcc}{m}{n}{{uccnew}{}}
The \LaTeX Project Public License

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D.1 Preamble

The \LaTeX Project Public License (LPPL) is the primary license under which the \LaTeX kernel and the base \LaTeX packages are distributed.

You may use this license for any work of which you hold the copyright and which you wish to distribute. This license may be particularly suitable if your work is \TeX-related (such as a \LaTeX package), but it is written in such a way that you can use it even if your work is unrelated to \TeX.

The section \textit{Whether and How to Distribute Works under This License}, below, gives instructions, examples, and recommendations for authors who are considering distributing their works under this license.

This license gives conditions under which a work may be distributed and modified, as well as conditions under which modified versions of that work may be distributed.

We, the \LaTeX3 Project, believe that the conditions below give you the freedom to make and distribute modified versions of your work that conform with whatever technical specifications you wish while maintaining the availability, integrity, and reliability of that work. If you do not see how to achieve your goal while meeting these conditions, then read the document \texttt{cfgguide.tex} and \texttt{modguide.tex} in the base \LaTeX distribution for suggestions.

D.2 Definitions

In this license document the following terms are used:

\textbf{Work}: Any work being distributed under this License.

\textbf{Derived Work}: Any work that under any applicable law is derived from the Work.
**Modification**: Any procedure that produces a Derived Work under any applicable law — for example, the production of a file containing an original file associated with the Work or a significant portion of such a file, either verbatim or with modifications and/or translated into another language.

**Modify**: To apply any procedure that produces a Derived Work under any applicable law.

**Distribution**: Making copies of the Work available from one person to another, in whole or in part. Distribution includes (but is not limited to) making any electronic components of the Work accessible by file transfer protocols such as FTP or HTTP or by shared file systems such as Sun’s Network File System (NFS).

**Compiled Work**: A version of the Work that has been processed into a form where it is directly usable on a computer system. This processing may include using installation facilities provided by the Work, transformations of the Work, copying of components of the Work, or other activities. Note that modification of any installation facilities provided by the Work constitutes modification of the Work.

**Current Maintainer**: A person or persons nominated as such within the Work. If there is no such explicit nomination then it is the ‘Copyright Holder’ under any applicable law.

**Base Interpreter**: A program or process that is normally needed for running or interpreting a part or the whole of the Work.

A Base Interpreter may depend on external components but these are not considered part of the Base Interpreter provided that each external component clearly identifies itself whenever it is used interactively. Unless explicitly specified when applying the license to the Work, the only applicable Base Interpreter is a ‘$\LaTeX$-Format’ or in the case of files belonging to the ‘$\LaTeX$-format’ a program implementing the ‘$\LaTeX$ language’.

### D.3 Conditions on Distribution and Modification

1. Activities other than distribution and/or modification of the Work are not covered by this license; they are outside its scope.
In particular, the act of running the Work is not restricted and no requirements are made concerning any offers of support for the Work.

2. You may distribute a complete, unmodified copy of the Work as you received it. Distribution of only part of the Work is considered modification of the Work, and no right to distribute such a Derived Work may be assumed under the terms of this clause.

3. You may distribute a Compiled Work that has been generated from a complete, unmodified copy of the Work as distributed under Clause item 2 above above, as long as that Compiled Work is distributed in such a way that the recipients may install the Compiled Work on their system exactly as it would have been installed if they generated a Compiled Work directly from the Work.

4. If you are the Current Maintainer of the Work, you may, without restriction, modify the Work, thus creating a Derived Work. You may also distribute the Derived Work without restriction, including Compiled Works generated from the Derived Work. Derived Works distributed in this manner by the Current Maintainer are considered to be updated versions of the Work.

5. If you are not the Current Maintainer of the Work, you may modify your copy of the Work, thus creating a Derived Work based on the Work, and compile this Derived Work, thus creating a Compiled Work based on the Derived Work.

6. If you are not the Current Maintainer of the Work, you may distribute a Derived Work provided the following conditions are met for every component of the Work unless that component clearly states in the copyright notice that it is exempt from that condition. Only the Current Maintainer is allowed to add such statements of exemption to a component of the Work.

   (a) If a component of this Derived Work can be a direct replacement for a component of the Work when that component is used with the Base Interpreter, then, wherever this component of the Work identifies itself to the user when used interactively with that Base Interpreter, the replacement component of this Derived Work clearly and
unambiguously identifies itself as a modified version of this component to the user when used interactively with that Base Interpreter.

(b) Every component of the Derived Work contains prominent notices detailing the nature of the changes to that component, or a prominent reference to another file that is distributed as part of the Derived Work and that contains a complete and accurate log of the changes.

(c) No information in the Derived Work implies that any persons, including (but not limited to) the authors of the original version of the Work, provide any support, including (but not limited to) the reporting and handling of errors, to recipients of the Derived Work unless those persons have stated explicitly that they do provide such support for the Derived Work.

(d) You distribute at least one of the following with the Derived Work:
   
i. A complete, unmodified copy of the Work; if your distribution of a modified component is made by offering access to copy the modified component from a designated place, then offering equivalent access to copy the Work from the same or some similar place meets this condition, even though third parties are not compelled to copy the Work along with the modified component;
   
ii. Information that is sufficient to obtain a complete, unmodified copy of the Work.

7. If you are not the Current Maintainer of the Work, you may distribute a Compiled Work generated from a Derived Work, as long as the Derived Work is distributed to all recipients of the Compiled Work, and as long as the conditions of Clause item 6 above, above, are met with regard to the Derived Work.

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9. Distribution of the Work or any Derived Work in an alternative format, where the Work or that Derived Work (in whole or in part) is then produced by applying some process to that format, does not relax or nullify any sections of this license as they pertain to the results of applying that process.

10. (a) A Derived Work may be distributed under a different license provided that license itself honors the conditions listed in Clause item 6 above above, in regard to the Work, though it does not have to honor the rest of the conditions in this license.

(b) If a Derived Work is distributed under a different license, that Derived Work must provide sufficient documentation as part of itself to allow each recipient of that Derived Work to honor the restrictions in Clause item 6 above above, concerning changes from the Work.

11. This license places no restrictions on works that are unrelated to the Work, nor does this license place any restrictions on aggregating such works with the Work by any means.

12. Nothing in this license is intended to, or may be used to, prevent complete compliance by all parties with all applicable laws.

D.4 No Warranty

There is no warranty for the Work. Except when otherwise stated in writing, the Copyright Holder provides the Work ‘as is’, without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of the Work is with you. Should the Work prove defective, you assume the cost of all necessary servicing, repair, or correction.

In no event unless required by applicable law or agreed to in writing will The Copyright Holder, or any author named in the components of the Work, or any other party who may distribute and/or modify the Work as permitted above, be liable to you for damages, including any general, special, incidental or consequential damages arising out of any use of the Work or out of inability to use the Work (including, but not limited to, loss of data, data being rendered inaccurate, or losses
sustained by anyone as a result of any failure of the Work to operate with any other programs), even if the Copyright Holder or said author or said other party has been advised of the possibility of such damages.

D.5 Maintenance of The Work

The Work has the status ‘author-maintained’ if the Copyright Holder explicitly and prominently states near the primary copyright notice in the Work that the Work can only be maintained by the Copyright Holder or simply that it is ‘author-maintained’.

The Work has the status ‘maintained’ if there is a Current Maintainer who has indicated in the Work that they are willing to receive error reports for the Work (for example, by supplying a valid e-mail address). It is not required for the Current Maintainer to acknowledge or act upon these error reports.

The Work changes from status ‘maintained’ to ‘unmaintained’ if there is no Current Maintainer, or the person stated to be Current Maintainer of the work cannot be reached through the indicated means of communication for a period of six months, and there are no other significant signs of active maintenance.

You can become the Current Maintainer of the Work by agreement with any existing Current Maintainer to take over this role.

If the Work is unmaintained, you can become the Current Maintainer of the Work through the following steps:

1. Make a reasonable attempt to trace the Current Maintainer (and the Copyright Holder, if the two differ) through the means of an Internet or similar search.

2. If this search is successful, then enquire whether the Work is still maintained.

   (a) If it is being maintained, then ask the Current Maintainer to update their communication data within one month.

   (b) If the search is unsuccessful or no action to resume active maintenance is taken by the Current Maintainer, then announce within the pertinent community your intention to...
take over maintenance. (If the Work is a \LaTeX work, this could be done, for example, by posting to news:comp.text.tex.)

3. (a) If the Current Maintainer is reachable and agrees to pass maintenance of the Work to you, then this takes effect immediately upon announcement.

(b) If the Current Maintainer is not reachable and the Copyright Holder agrees that maintenance of the Work be passed to you, then this takes effect immediately upon announcement.

4. If you make an ‘intention announcement’ as described in item 2b above and after three months your intention is challenged neither by the Current Maintainer nor by the Copyright Holder nor by other people, then you may arrange for the Work to be changed so as to name you as the (new) Current Maintainer.

5. If the previously unreachable Current Maintainer becomes reachable once more within three months of a change completed under the terms of item 3b above or item 4 above, then that Current Maintainer must become or remain the Current Maintainer upon request provided they then update their communication data within one month.

A change in the Current Maintainer does not, of itself, alter the fact that the Work is distributed under the LPPL license.

If you become the Current Maintainer of the Work, you should immediately provide, within the Work, a prominent and unambiguous statement of your status as Current Maintainer. You should also announce your new status to the same pertinent community as in item 2b above above.

D.6 Whether and How to Distribute Works under This License

This section contains important instructions, examples, and recommendations for authors who are considering distributing their works under this license. These authors are addressed as ‘you’ in this section.
D.6.1 Choosing This License or Another License

If for any part of your work you want or need to use distribution conditions that differ significantly from those in this license, then do not refer to this license anywhere in your work but, instead, distribute your work under a different license. You may use the text of this license as a model for your own license, but your license should not refer to the LPPL or otherwise give the impression that your work is distributed under the LPPL.

The document `modguide.tex` in the base LaTeX distribution explains the motivation behind the conditions of this license. It explains, for example, why distributing \LaTeX under the GNU General Public License (GPL) was considered inappropriate. Even if your work is unrelated to LaTeX, the discussion in `modguide.tex` may still be relevant, and authors intending to distribute their works under any license are encouraged to read it.

D.6.2 A Recommendation on Modification Without Distribution

It is wise never to modify a component of the Work, even for your own personal use, without also meeting the above conditions for distributing the modified component. While you might intend that such modifications will never be distributed, often this will happen by accident — you may forget that you have modified that component; or it may not occur to you when allowing others to access the modified version that you are thus distributing it and violating the conditions of this license in ways that could have legal implications and, worse, cause problems for the community. It is therefore usually in your best interest to keep your copy of the Work identical with the public one. Many works provide ways to control the behavior of that work without altering any of its licensed components.

D.6.3 How to Use This License

To use this license, place in each of the components of your work both an explicit copyright notice including your name and the year the work was authored and/or last substantially modified. Include
also a statement that the distribution and/or modification of that component is constrained by the conditions in this license.

Here is an example of such a notice and statement:

```latex
%%% pig.dtx
%%% Copyright 2005 M. Y. Name
%
%%% This work may be distributed and/or modified under the
%%% conditions of the LaTeX Project Public License, either version 1.3
%%% of this license or (at your option) any later version.
%%% The latest version of this license is in
%%% http://www.latex-project.org/lppl.txt
%%% and version 1.3 or later is part of all distributions of LaTeX
%%% version 2005/12/01 or later.
%%
%%% This work has the LPPL maintenance status ‘maintained’.
%%
%%% The Current Maintainer of this work is M. Y. Name.
%%
%%% This work consists of the files pig.dtx and pig.ins
%%% and the derived file pig.sty.
```

Given such a notice and statement in a file, the conditions given in this license document would apply, with the ‘Work’ referring to the three files `pig.dtx`, `pig.ins`, and `pig.sty` (the last being generated from `pig.dtx` using `pig.ins`), the ‘Base Interpreter’ referring to any ‘LaTeX-Format’, and both ‘Copyright Holder’ and ‘Current Maintainer’ referring to the person M. Y. Name.

If you do not want the Maintenance section of LPPL to apply to your Work, change ‘maintained’ above into ‘author-maintained’. However, we recommend that you use ‘maintained’ as the Maintenance section was added in order to ensure that your Work remains useful to the community even when you can no longer maintain and support it yourself.

**D.6.4 Derived Works That Are Not Replacements**

Several clauses of the LPPL specify means to provide reliability and stability for the user community. They therefore concern themselves with the case that a Derived Work is intended to be used as a
(compatible or incompatible) replacement of the original Work. If this is not the case (e.g., if a few lines of code are reused for a completely different task), then clauses 6b and 6d shall not apply.

D.6.5 Important Recommendations

D.6.5.1 Defining What Constitutes the Work  The LPPL requires that distributions of the Work contain all the files of the Work. It is therefore important that you provide a way for the licensee to determine which files constitute the Work. This could, for example, be achieved by explicitly listing all the files of the Work near the copyright notice of each file or by using a line such as:

```
%% This work consists of all files listed in manifest.txt.
```

in that place. In the absence of an unequivocal list it might be impossible for the licensee to determine what is considered by you to comprise the Work and, in such a case, the licensee would be entitled to make reasonable conjectures as to which files comprise the Work.
Change History

v0.70
General: First working version derived from the author’s personal thesis class.: Added running headers and footers. .....
\now: Added timestamp .. 119
\@pnumwidth: Changed pnumwidth. ..................... 137
General: Last changes before release: 1) Added all known degrees; 2) Updated bibliographic reference styles for those schools and departments who responded to the request; 3) Fixed text-wrapping error in footers and headers. ........... 1
\madedecl: Centering removed from Declaration. .... 128
Wording from Michelle Nelson. ............... 128
\maketitle: Changed author to LARGE size. .... 124

v0.90
General: Changes after first release: 1) Added justified option; 2) Implemented 10/11/12 point size options; 3) Changed proportions of the page for floats. ........................ 1
\UCC@textbodywidth: Zapped the intrusive double backslash in titles affecting the running footers ....... 119

v0.91
General: Changes after first release: 1) Added justified option; 2) Implemented 10/11/12 point size options; 3) Changed proportions of the page for floats. ........................ 1

v0.92
General: Bugs reported by testers: 1) Added code to automate detection of use of tables and figures, and disable LoT and LoF accordingly.; 2) Added nolot and nolof options to manually disable automated Lists of Tables and Figures.; 3) Replaced the harvard package reference with natbib and har2nat, because harvard on its own was invoking html and breaking on an undefined htmladdnormallink* command (thanks to Dan Luecking, Mico Loretan, and others for this); 4) Corrected misspelling of Sociology. .................. 1
\epigraph: Added Epigraphs. 134

v0.93
General: More bugs reported by testers: 1) Replaced re-floating to put captions under figures (already above tables).; 2) Enclosed footmisc in \justified to defeat ragged footnotes; moved ragged redefinition of captions to do the same.; 3) Added plainheaders option to avoid fancy headers.; 4) Added indented option to revert to indented/unspaced paragraphs.; 5) Added stable option to footmisc to allow footnotes in chapter and section headings.. ......... 1
\ifjustified: Added justified in response to user queries .............. 111

v0.94

General: Fixed incorrect recording of justification option: Justification option was not resetting indentation and paragraph spacing. .................. 1
\ifjustified: updated (manual comment) ........ 116

v0.95

General: Reinforced wording of justification option: Justification option was open to misinterpretation. ..... 1

v0.96

General: Added subject and keywords ............... 122
Rewrite of XML for new version of classpack:
Changed method of specification of packages. ..... 1
\maketitle: Added PDF metadata .................. 128
\now: Simplified now, added adobedate .......... 119

v0.97

General: Added author so we can have optional student number ............ 120
Added mdiss option ... 111
Experimenting with mdiss option for dissertations:
Minor Dissertation option. 1
\maketitle: Changed it back. .......................... 133

v1.00

General: Added new code for citations in quotations:
This tucks citations into the remaining space of the last line where possible.. . . 1
\epigraph: Added new posi-
tional code for citations to
epigraphs ............... 135
\quotation: Added new posi-
tional code for citations to
block quotations ....... 136
\UCC@textbodywidth: Made
plain style for chapter
starts retain the page num-
ber ................... 117

v1.01
General: Updated installation
instructions: Added detail
about installing the crest.. 1

v1.02
General: Added revision date
facility for drafts: Added
@revdate and revdate; if
present in drafts, they su-
preseed the default TODAY
date.. .................. 1

v1.03
General: Renamed Bibliogra-
phy to References: Follow-
ing suggestion from Ehsan
Sooudi of Tyndall.. ...... 1

v1.04
General: Changes to quota-
tions: Spacing of instep ci-
tation was not flush to mar-
gin .................... 1
\quotation: Removed foot-
notesize for citation, changed
hfil to hfill, and
moved the parfillskip and
finalhyphenemerts ear-
lier .................... 136

v1.05
General: "kernel". ........ 1

v1.06
General: Changes to bibrefs:
Physics changed to ieeetr;
resetbibstyle updated. . . 1

v1.07
General: Added a setlist com-
mand via prepost to preset
description lists to the un-
boxed option ........... 136
Reorganisation of imple-
mentations sections: Addi-
tion of crest files, changes
to description lists. ...... 1

v1.08
General: Added short title to
main title: Use the @title
and @@title. .......... 1
\title: Added the @title and
@@title commands .... 123

v1.09
General: Corrected locations
for installation in build file:
Distinct directories for dif-
ferent embedded filetypes;
also updated BIS to use
APA. .................... 1

v1.10
General: Added twoside op-
tion: Some people need
to print bindable two-sided
copies of long theses.. . . 1
\UCC@textbodywidth: Added
specs for twosided fancy
headers ............... 117

v1.11
General: Removed from auto-
maketitle and put in start
of part or chapter: . . . 1
acknowledgements: Added
maketitle test to acknowled-
gements. .......... 130
\UCC@textbodywidth: Added
replication of columnwidth
for use in headers to avoid
conflict with lontable and
lscape. ............... 117

174
v1.12
General: Fixed double-sided: ........................................ 1

v1.13
General: Added detection for glossaries package: ........ 1

v1.14
General: Changed prelims to onehalfspacing: ..................... 1

v1.15
General: Added method to change tocdepth: ...................... 1

v1.16
General: Added switch to fix Head of Dept/School: ............ 1

v1.17
\@usebib: Added code for apacite exception ........ 52
General: Added switch to force apacite to load after hyperref: And removed the data, as the problem is fixed, but retained the code. ......................... 1
Documented the fix for apacite .................... 41

v1.18
General: Split options tables into two chapters: Refactored code for updated ClassPack. ..................... 1

v1.19
General: Fixed bug in automated LOF/LOT: Added separate counters, incremented by endtable and endfigure (thanks to Malcolm Prinn of Tyndall for finding this bug). ........ 1
These are now separate counters to reflect total figs and tables, because the normal counters get reset at the start of each chapter ................ 107
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