The uacoursetext class*

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1 Introduction

This package implements the house style of Universiteit Antwerpen for course texts and master's theses except for the font. Computer Modern Bright is used instead of the non-free Auto1. Using these class files will make it easy for you to make and keep your course texts and master's theses compliant to this version and future versions of the UA house style.

If you think

- there's an error in compliancy w.r.t. the house style,
- there's a feature missing in this class file,
- there's a bug in this class file,

please, contact us through e-mail (walter.daems@ua.ac.be). We'll provide you with an answer and if (and as soon as) possible with a solution to the problem you spotted.

Do you like these class files? You're welcome to send us beer, wine, or just kind words.

2 Synopsis

The uacoursetext and uamasterthesis classes are an extension to the standard LATEX book class. It is intended to be used for writing course texts and master's theses. It provides a title page that is compliant to the UA house style, and it also typesets the rest of your document appropriately.

^{*}This document corresponds to uacoursetext 1.1, dated 2013/05/29.

It requires (and uses) the following packages:

- the ifthen package
- the mtarg package
- the geometry package
- the hyperref package
- the cmbright package
- the graphicx package
- the eso-pic package
- the color package
- the tikz package
- the fancyhdr package
- the pst-barcode package
- the auto-pst-pdf package

and optionally

• the varioref package.

So make sure these packages are available to your LATEX compiler.

3 Portability

This class file should be ready to use with all common LATEX compilers (PDFLATEX, LATEX, XeLATEX,...) from the major TEX-distributions (TeTeX, TexLive, MikTeX). If you experience problems, please inform the authors.

4 Usage

4.1 Basic Usage

4.1.1 uacoursetext class

Use the following harness for your LATEX course text:

```
\documentclass[a4paper]{uacoursetext}
\usepackage{<include any packages you require here>}
\facultyacronym{<put your faculty's acronym here}
\title{<put your title here>}
 \subtitle{<put your subtitle here>}
 \author{<put your name here>}
 \courseversion{<put a version identifier here>}
 \versionyear{<the publication date of the course here>}
\lecturer{<person teaching the course>}
 \programme{<descriptor of first programme>}
 \course{<course code>}{<name of the course>}%
\academicyear{<XXXX-YYYY>}
 \begin{document}
   \maketitle
   % put your LaTeX code here
   \finalpage
 \end{document}
4.1.2 uamasterthesis class
Use the following harness for your LATEX master's thesis:
\documentclass[a4paper]{uamasterthesis}
 \usepackage{<include any packages you require here>}
\facultyacronym{<put your faculty's acronym here>}
\title{<put your title here>}
 \author{<put your name here>}
 \supervisori{<put the first supervisor's name(s) here}
 \supervisorii<put the first supervisor's name(s) here}
 \supervisoriii{<put the first supervisor's name(s) here}
 \supervisoriv{<put the first supervisor's name(s) here}
% classmarker
 \academicyear{<XXXX-YYYY>}
```

```
\begin{document}
  \maketitle
  % put your LaTeX code here
  \finalpage
\end{document}
```

4.2 The class options explained

The class has several options. They are listed below. After every option, it has been indicated to which class the option applies (between square brackets).

copyright

[uacoursetext]

This option forces printing a watermark on every page. For the paper version of your document, this is inappropriate, but for any e-copy you make available, this may be appropriate;

filled

[uacoursetext / uamasterthesis]

This option causes the text to be filled (simultaneous left and right alignment). Though this setting is not recommended, it is provided because the default \raggedright cannot be undone. The filled option prevents the \raggedright from being issued. However, if you care about the readability of your text, you shouldn't use this option.

${\tt titlepagenoartwork}$

[uacoursetext / uamasterthesis]

This option forces the title pages to be typeset without circle graphics and logo. This allows for printing on a pre-printed color sheet that already contains circle graphics and logo;

titlepagetableonly

[uacoursetext / uamasterthesis]

This option forces the title-page data to be printed in table form as first page. Some publishers require the manuscript to be delivered in this form. They perform the entire typesetting of the title page.

qr [uacoursetext]

This option allows you to generate a QR code containing the details of the course on the title page (or the table-only) title page. For this option to work, the package pstricks is loaded. It will not work with pdfIATEX unless you enable shell escape. Read your pdfIATEX-package documentation on how to do that.

Common sets of options depend on the purpose:

• to make a text ready for electronic distribution: a4paper, copyright.

- to make a camera-ready text (for printing) in case the cover is printed on a pre-printed color artwork cover sheet is: a4paper, qr, titlepagenoartwork.
- to make a camera-ready text (for printing) in case the cover is typeset based on table data: a4paper, qr, titlepagetableonly.

4.3 The macros explained

After every macro, it has been indicated to which class the macro applies (between square brackets), and whether it is mandatory or not.

\facultyacronym

[uacoursetext / uamasterthesis] (mandatory)

This macro sets the acronym of the faculty. This macro also sets the faculty name according to the specified acronym. If you're missing an faculty or institute, please ask the authors to complete the list.

The available acronyms are:

Acronym	Faculty name
CPG	Centrum Pieter Gillis
FBD	Faculteit Farmaceutische, Biomedische en Diergeneeskundige Wetenschappen
GGW	Faculteit Geneeskunde en Gezondheidswetenschappen
IOB	Instituut voor Ontwikkelingsbeleid- en beheer
IOIW	Instituut voor Onderwijs- en Informatiewetenschappen
LW	Faculteit Letteren en Wijsbegeerte
ow	Faculteit Ontwerpwetenschappen
PSW	Faculteit Politieke en Sociale Wetenschappen
REC	Faculteit Rechten
TEW	Faculteit Toegepaste Economische Wetenschappen
TI	Faculteit Toegepaste Ingenieurswetenschappen
WET	Faculteit Wetenschappen

\title [uacoursetext / uamasterthesis] (mandatory)

This macro sets the title of the document. It also sets the pdftitle tag of the hyperref package, so that the PDF-document meta-information is correct.

\subtitle

[uacoursetext] (optional)

This macro sets the title of the document. You may use this

- to further clarify the title
- to indicate the nature of this document

The latter is to be considered when you want to provide multiple documents as parts of the full course text (e.g., Course Notes, Formula Collection, Exercise Book,

Solution Book). This macro also sets the subject tag of the hyperref package, so that the PDF-document meta-information is correct.

\author [uacoursetext / uamasterthesis] (mandatory)

This macro sets the author of the document. It also sets the pdfauthor tag of the hyperref package, so that the PDF-document meta-information is correct.

\publisher [uacoursetext] (mandatory)

This macro sets the publisher information of the document. It is printed on the front page. It defaults to Universitas printing, one of the standard printing service of Universiteit Antwerpen.

\publishercode [uacoursetext] (mandatory)

This macro sets the publisher code of the document. It is printed on the front page. This is code that the publisher uses for its internal administration. It may be a proprietary code, or an ISBN number.

\courseversion [uacoursetext] (optional)

This macro indicates which version of the course this is. You may use your own versioning system that puts things clear for you.

\versionyear [uacoursetext] (mandatory)

This is to be the year in which you published the current version of the course in the form YYYY.

\lecturer [uacoursetext] (mandatory)

This is the name of the person that actually teaches the course (in Dutch: titularis). If there are multiple persons, please, use the macros \lectureri, \lecturerii, \lectureriv.

\programme [uacoursetext] (mandatory)

This macro takes three arguments:

• the type of the programme: BA, SP, VP or MA

• the domain of the programme: IW

• the qualifier of the programme: BK, CH, BCH, EM, EI

If you need more programme classes or qualifiers, ask the authors to complete the available codes. Correct usage of the macro will result in error-free descriptions on your title page. You can overrule the standard descriptions, by specifying 'FREE' as frist argument and a free text description as second, leaving the third one empty. However, we strongly advise against taking this route. Instead, ask the authors to copmlete the available codes.

\supervisor [uamasterthesis] (mandatory)

This is the name of the person that promotes the thesis. If there are mutliple persons, please, use the macros \supervisori, \supervisorii, \supervisoriii, \supervisoriv.

[uacoursetext] (mandatory)

Code (first argument) and name (second argument) of the curriculum course this coursematerial belongs to. The code should be of the form: TNNNFFFAAA, with:

Code	Explanation
T	a number indicating the type of programme
	(1 for Bachelor courses, 2 for Master courses, 5 for specific courses
	of preparatory programmes)
NNN	a number assigned by the Faculty's administration
FFF	the acronym of your Faculty, e.g., FTI
AAA	an alphanumeric code assigned by the Faculty's administration

An example of such a code: 1001FTIWIS, for the first-semester mathematics course of the Faculty of Applied Engineering.

The name should be of the form x-YYYYYYYYY with x the number of the semester and YYYYYYYY the official name of the course.

[uacoursetext] (mandatory) \course

In case the course's name contains accented characters, one should also provide a qr version, containing utf8-characters only. The macro for this purpose takes only one argument, i.e. the course's name! This is to avoid inconsistencies in the course codes.

\academicyear

[uacoursetext / uamasterthesis] (mandatory)

Use this macro to specify the academic ear in full, i.e. in the form XXXX-YYYY.

\diploma [uamasterthesis] (mandatory)

This must be the official title, in Dutch. To avoid errors, we chose to use specific codes, that will expand to the correct description.

Code	Description (in Dutch!)
MA-IW-BK	Master of Science in de industriële wetenschappen: bouwkunde
MA-IW-BCH	Master of Science in de industriële wetenschappen: biochemie
MA-IW-CH	Master of Science in de industriële wetenschappen: chemie
MA-IW-EI	Master of Science in de industriële wetenschappen: elektronica-
	ICT
MA-IW-EI-AE	Master of Science in de industriële wetenschappen: elektronica-
	ICT, afstudeerrichting, Automotive Engineering
MA-IW-EI-ICT	Master of Science in de industriële wetenschappen: elektronica-
	ICT, afstudeerrichting ICT
MA-IW-EM-AE	Master of Science in de industriële wetenschappen: Elektrome-
	chanica, afstudeerrichting Automotive Engineering
MA-IW-EM-AU	Master of Science in de industriële wetenschappen: Elektrome-
	chanica, afstudeerrichting Automatisering
MA-IW-EM-EM	Master of Science in de industriële wetenschappen: Elektrome-
	chanica, afstudeerrichting Elektromechanica

\defensedate [uamasterthesis] (mandatory)

Date of the defense in Dutch, in the form 'month year', e.g. "juni 2012".

\defenselocation

[uamasterthesis] (optional)

Location of the defense. Defaults to "Antwerpen".

\copyrightnotices

[uacoursetext] (optional)

Use this macro to specify additional copyright notice messages to appear in het copyright notice on the bottom of page 2 of your course text.

4.4Examples

4.4.1 uacoursetext

```
<*ct-example>
```

\documentclass[a4paper,11pt,oneside,openright,english,qr]{uacoursetext}

\usepackage[english,dutch]{babel} \selectlanguage{english}

\title{Z\'agen, zoeken en zuchten} \qrtitle{Zgen, zoeken en zuchten} \subtitle{Cursusnota's}

\author{Walter Daems en Paul Levrie}

\courseversion{1.3} \versionyear{2013}

\lectureri{Zoltan Zoekers}

```
\qrlectureri{Zoltan Zokers}
\lecturerii{Siana Sigh}
\lectureriii{Zeger de Zager}
\qrlectureriii{Zeger de Zger}
\facultyacronym{TI}
\programme{MA}{IW}{EI}
\coursei{2023FTIZZZ}{5-Zoekmachines in een zaagperspectief}
\courseii{2045FTIIII}{6-Zaagmachines in \'e\'en zuchtperspectief}
\qrcourseii{6-Zaagmachines in n zuchtperspectief}
\academicyear{2012-2013}
\publisher{Cursusdienst\\UNIVERSITAS\\
Prinsesstraat 16\\
2000 Antwerpen\\
T +32 3 233 23 72\\
F +32 3 233 65 81\\
E info@cursusdienst.be\\
W www.universitas.be}
\publishercode{C11111102}
\copyrightnotices{
 The graphics in this document have been typeset using \texttt{TikZ}.\\
 This document has been \TeX-ed on a GNU/Linux workstation.
}
\begin{document}
\selectlanguage{dutch} % or english if your text is in English
\maketitle
\frontmatter
\tableofcontents
\mainmatter
\chapter*{Inleiding}
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do
eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad
minim veniam, quis nostrud exercitation ullamco laboris nisi ut
aliquip ex ea commodo consequat. Duis aute irure dolor in
reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla
pariatur. Excepteur sint occaecat cupidatat non proident, sunt in
culpa qui officia deserunt mollit anim id est laborum.
\chapter{Onzin voor dummies}
```

\section{Een beetje Cicero}

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla pariatur?

\begin{equation}
 e^{-j\pi} + 1 = 0
\end{equation}

At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga. Et harum quidem rerum facilis est et expedita distinctio. Nam libero tempore, cum soluta nobis est eligendi optio cumque nihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem quibusdam et aut officiis debitis aut rerum necessitatibus saepe eveniet ut et voluptates repudiandae sint et molestiae non recusandae. Itaque earum rerum hic tenetur a sapiente delectus, ut aut reiciendis voluptatibus maiores alias consequatur aut perferendis doloribus asperiores repellat.

\section{En waartoe het geleid heeft}

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

\subsection{Herhaling}

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui

dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla pariatur?

\subsection{Begint vervelend te worden}

At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga. Et harum quidem rerum facilis est et expedita distinctio. Nam libero tempore, cum soluta nobis est eligendi optio cumque nihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem quibusdam et aut officiis debitis aut rerum necessitatibus saepe eveniet ut et voluptates repudiandae sint et molestiae non recusandae. Itaque earum rerum hic tenetur a sapiente delectus, ut aut reiciendis voluptatibus maiores alias consequatur aut perferendis doloribus asperiores repellat.

\newpage

\subsection{Begint echt vervelend te worden}

At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga. Et harum quidem rerum facilis est et expedita distinctio. Nam libero tempore, cum soluta nobis est eligendi optio cumque nihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem quibusdam et aut officiis debitis aut rerum necessitatibus saepe eveniet ut et voluptates repudiandae sint et molestiae non recusandae. Itaque earum rerum hic tenetur a sapiente delectus, ut aut reiciendis voluptatibus maiores alias consequatur aut perferendis doloribus asperiores repellat.

\chapter{Besluit}

\backmatter \appendix

\chapter{Symbolen}
\chapter{Romeinse sprekers}
\chapter{Referentielijst}

```
\makefinalpage
\end{document}
</ct-example>
4.4.2 uamasterthesis
<*mt-example>
\documentclass[a4paper,11pt,twoside,openright,english] {uamasterthesis}
\usepackage[english,dutch]{babel}
\selectlanguage{english}
\title{Minimax optimisatie voor performantieruimtemodellering}
\author{Bert Bibber}
\supervisori{Prof. dr. ir. Kumulus (Universiteit Antwerpen)}
\supervisorii{Prof. dr. Hilarius Warwinkel (TNT-Bang, N.V.)}
\supervisoriii{ing. Piet Pienter (POM)}
\facultyacronym{TI}
\academicyear{2012-2013}
\diploma{MA-IW-EI-ICT}
\defenselocation{Antwerpen}
\defensedate{juni 2012}
\begin{document}
\selectlanguage{dutch} % or english if your text is in English
\maketitle
\frontmatter
\tableofcontents
\mainmatter
\chapter*{Inleiding}
Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do
eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad
minim veniam, quis nostrud exercitation ullamco laboris nisi ut
aliquip ex ea commodo consequat. Duis aute irure dolor in
reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla
pariatur. Excepteur sint occaecat cupidatat non proident, sunt in
culpa qui officia deserunt mollit anim id est laborum.
```

\chapter{Onderzoeksvraag}

\section{Een beetje Cicero}

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo. Nemo enim ipsam voluptatem quia voluptas sit aspernatur aut odit aut fugit, sed quia consequuntur magni dolores eos qui ratione voluptatem sequi nesciunt. Neque porro quisquam est, qui dolorem ipsum quia dolor sit amet, consectetur, adipisci velit, sed quia non numquam eius modi tempora incidunt ut labore et dolore magnam aliquam quaerat voluptatem. Ut enim ad minima veniam, quis nostrum exercitationem ullam corporis suscipit laboriosam, nisi ut aliquid ex ea commodi consequatur? Quis autem vel eum iure reprehenderit qui in ea voluptate velit esse quam nihil molestiae consequatur, vel illum qui dolorem eum fugiat quo voluptas nulla pariatur?

```
\begin{equation}
  e^{-j\pi} + 1 = 0
\end{equation}
```

At vero eos et accusamus et iusto odio dignissimos ducimus qui blanditiis praesentium voluptatum deleniti atque corrupti quos dolores et quas molestias excepturi sint occaecati cupiditate non provident, similique sunt in culpa qui officia deserunt mollitia animi, id est laborum et dolorum fuga. Et harum quidem rerum facilis est et expedita distinctio. Nam libero tempore, cum soluta nobis est eligendi optio cumque nihil impedit quo minus id quod maxime placeat facere possimus, omnis voluptas assumenda est, omnis dolor repellendus. Temporibus autem quibusdam et aut officiis debitis aut rerum necessitatibus saepe eveniet ut et voluptates repudiandae sint et molestiae non recusandae. Itaque earum rerum hic tenetur a sapiente delectus, ut aut reiciendis voluptatibus maiores alias consequatur aut perferendis doloribus asperiores repellat.

```
\chapter{Literatuurstudie}
\chapter{Theoretische achtergrond}
\chapter{Eigen realisatie}
\chapter{Besluit}
\backmatter
\appendix
\chapter{Symbolen}
\chapter{Referentielijst}

\makefinalpage
\end{document}
```

5 Implementation

5.1 Class inheritance

For simplicity, we'll derive everything from the standard book class.

Before loading the class, we provide the extra options.

```
1 (*ct)
2 \newif\if@copyright
3 \DeclareOption{copyright}{\@copyrighttrue}
4 \neq 4 
5 \DeclareOption{qr}{\@qrtrue}
6 (/ct)
7 \langle *ct \mid mt \rangle
8 \newif\if@titlepagenoartwork
{\tt 9 \ \ DeclareOption\{titlepagenoartwork\}\{\ \ \ \ \ \ \ \ \}} \\
10 \newif\if@titlepagetableonly
11 \DeclareOption{titlepagetableonly}{\@titlepagetableonlytrue}
12 \neq 12 
13 \DeclareOption{filled}{\@filledtrue}
14 (/ct | mt)
We execute some standard options: We load the book class.
15 (*ct | mt)
16 \ExecuteOptions{a4paper,11pt,final,oneside,openright}
17 \ProcessOptions
18 \LoadClassWithOptions{book}
19 (/ct | mt)
```

5.2 Modern typesetting

Let's force some modern typesetting without paragraph indentation and with a decent paragraph spacing.

```
20 \ mt \\
21 \setlength{\parindent}{0pt}\\
22 \addtolength{\parskip}{0.75}\ \\
23 \setcounter{secnumdepth}{3}\\
24 \/ct | mt \\
\end{array}
```

5.3 Auxiliary packages

Reinventing the wheel is a waste of time, let's preload some appropriate auxiliary packages that have proven their value.

5.3.1 Geometry

Let's reduce the margins to 1 inch each.

```
25 \langle *ct \mid mt \rangle
26 \RequirePackage[top=1in, bottom=1in, left=1in, right=1in]{geometry}
27 \langle /ct \mid mt \rangle
```

5.3.2 Font packages

The utf8 stuff has been disabled because of the barcode package that screws up on that encoding.

```
28 (*ct | mt)
29 \RequirePackage{cmbright}
30 \RequirePackage{ifluatex}
31 \RequirePackage{ifxetex}
32 \ifluatex
33 \RequirePackage{fontspec}
34 %\setmainfont{Calibri}
35 %\setsansfont{Calibri}
36 \else
37 \ifxetex
38 \RequirePackage{fontspec}
39 %\setmainfont{Calibri}
40 %\setsansfont{Calibri}
41 \else
42 \usepackage[final,expansion=true,protrusion=true,spacing=true,kerning=true]{microtype}
43 \fi
44 \fi
45 (/ct | mt)
```

5.3.3 Boilerplate packages

Some boilerplate packages and an empty macro to test against (using\ifx)

```
46 (*ct | mt)
47 \RequirePackage{ifthen}
48 \RequirePackage{ifmtarg}
49 \newcommand{\Qemptymacro}{}
50 (/ct | mt)
```

5.3.4 Graphics packages

Graphics packages that are required for the title page, but may come in handy for regular use as well.

Some packages for coursetext and masterthesis:

```
51 \langle *ct | mt \rangle
52 \RequirePackage{graphicx}
53 \RequirePackage{eso-pic}
54 \RequirePackage{color}
55 \RequirePackage{tikz}
56 \langle /ct | mt \rangle
```

In uacoursetext we also want to generate a qr code. Therefore we load the pst-barcode and auto-pst-pdf package.

```
57 (*ct)
58 \if@qr
59 \RequirePackage{pst-barcode}
60 \RequirePackage{auto-pst-pdf}
61 \fi
62 \( /ct \)
```

5.3.5 Header/Footer

The de-facto standard for headers and footers:

```
63 \ \langle *ct \mid mt \rangle
64 \ RequirePackage{fancyhdr}
65 \ \langle /ct \mid mt \rangle
```

5.4 Colors

```
 \begin{array}{lll} 66 & \langle \text{*ct} \mid \text{mt} \rangle \\ 67 \land \text{definecolor}\{\text{uacorpbord}\}\{\text{cmyk}\} & \{0.00, 1.00, 0.60, 0.37\} \\ 68 \land \text{definecolor}\{\text{uacorpblue}\}\{\text{cmyk}\} & \{1.00, 0.25, 0.00, 0.50\} \\ 69 \land \text{definecolor}\{\text{uacorplightblue}\}\{\text{cmyk}\}\{1.00, 0.00, 0.08, 0.13\} \\ 70 \land \text{definecolor}\{\text{uacorporange}\}\{\text{cmyk}\} & \{0.00, 0.32, 1.00, 0.09\} \\ 71 \land \text{definecolor}\{\text{uaftifresh}\}\{\text{cmyk}\} & \{0.34, 1.00, 0.00, 0.00\} \\ 72 \land \text{definecolor}\{\text{uaftisober}\}\{\text{cmyk}\} & \{0.10, 1.00, 0.00, 0.049\} \\ 73 \land \text{definecolor}\{\text{lightgray}}\{\text{cmyk}\} & \{0.00, 0.00, 0.00, 0.05\} \\ 74 & \langle \text{ct} \mid \text{mt} \rangle & \\ \end{array}
```

5.5 Tags

\facultyacronym

The facultyacronym sets the faculty acronym tag \@facultyacronym that is used in the header/footer information. The correct acronym also sets the faculty's name

```
correctly.
   75 (*ct | mt)
   76 \newcommand{\@facultyacronym}{}
   77 \newcommand{\@faculty}{}
   78 \newcommand{\@qrfaculty}{}
   79 \newcommand{\facultyacronym}[1]{
                    \renewcommand{\@facultyacronym}{#1}
                   \label{lem:cpg} $$ \left( \mathbb{T}_{0} \right) = \mathbb{T}_{0}. $$ if the nelse {\equal $\#1$ {\equal $\#1$ } {\equal $\#1$ } $$ if the nelse {
   81
                                  Pieter Gillis}}{
   82
                   \ifthenelse{\equal{#1}{FBD}}{\renewcommand\@faculty{Faculteit}
   83
                                  Farmaceutische, Biomedische en Diergeneeskundige Wetenschappen}}{
                   \ifthenelse{\equal{#1}{GGW}}{\renewcommand\@faculty{Faculteit}
   85
                                  Geneeskunde en Gezondheidswetenschappen}}{
   86
                   \ifthenelse{\equal{#1}{IOB}}{\renewcommand\@faculty{Instituut
   87
                                  voor Ontwikkelingsbeleid- en beheer}}{
   88
                   \ifthenelse{\equal{#1}{IOIW}}{\renewcommand\@faculty{Instituut
   89
   90
                                  voor Onderwijs- en Informatiewetenschappen}}{
   91
                   \ifthenelse{\equal{#1}{LW}}{\renewcommand\@faculty{Faculteit}
   92
                                  Letteren en Wijsbegeerte}}{
                   \ifthenelse{\equal{#1}{OW}}}{\renewcommand\@faculty{Faculteit}
   93
                                  Ontwerpwetenschappen}}{
   94
                   \verb|\fifthenelse{\equal{#1}{PSW}}| $$ \equal{#1}{PSW}$| $$ \equal{*1}{PSW}$| $$ \equal{#1}{PSW}$| $$ \equal{#1}{PS
   95
                                  Politieke en Sociale Wetenschappen}}{
   96
   97
                   \ifthenelse{\equal{#1}{REC}}{\renewcommand\@faculty{Faculteit}
                                  Rechten}}{
   98
                   \ifthenelse{\equal{#1}{TEW}}}{\renewcommand\@faculty{Faculteit}
   99
 100
                                  Toegepaste Economische Wetenschappen}}{
                   \ifthenelse{\equal{#1}{TI}}{\renewcommand\@faculty{Faculteit}
101
                                  Toegepaste Ingenieurswetenschappen}}{
102
                   \ifthenelse{\equal{#1}{WET}}{\renewcommand\@faculty{Faculteit}
103
104
                                  Wetenschappen}}{
105
                            \errmessage{Error: wrong faculty acronym; choose one of FBD, GGW,
                                  LW, OW, PSW, REC, TEW, TI, WET}}}}}}}}
106
107 (/ct | mt)
```

\title The title tag is native to LATEX. It sets the \@title tag that will be used on the title page. However, in view of the qr trouble, we fiddle a little with it. In case the title contains accented characters, you also need to provide a qr version in full unicode (so without the traditional LATEX accented characters.

```
108 (*ct)
109 \newcommand{\Qqrtitle}{}
110 \renewcommand{\title}[1]{%
111 \renewcommand\Qtitle{#1}
112 \ifx\Qqrtitle\Qemptymacro
113 \renewcommand\Qqrtitle{#1}
114 \fi
115}
```

```
116 \newcommand{\qrtitle}[1]{%
117 \renewcommand\@qrtitle{#1}
118 }
119 \/ct\
```

\subtitle This macro sets the \@subtitle tag that later will be used on the title page, in the header/footer and to set the appropriate hyperref tag.

```
120 (*ct)
121 \newcommand{\@subtitle}{}
122 \newcommand{\@qrsubtitle}{}
123 \newcommand{\subtitle}[1]{%
     \renewcommand\@subtitle{#1}
     \ifx\@qrsubtitle\@emptymacro
125
126
       \renewcommand\@qrsubtitle{#1}
     \fi
127
128 }
129 \newcommand{\qrsubtitle}[1]{%
     \renewcommand\@qrsubtitle{#1}
130
131 }
132 (/ct)
```

\author The author tag is native to LATEX. It sets the \@author tag that will be used on the title page. However, in view of the qr trouble, we fiddle a little with it. In case the title contains accented characters, you also need to provide a qr version in full unicode (so without the traditional LATEX accented characters.

```
133 (*ct)
134 \newcommand{\@qrauthor}{}
135 \renewcommand{\author}[1] {%
136 \renewcommand\@author{#1}
137 \ifx\@qrauthor\@emptymacro
138 \renewcommand\@qrauthor{#1}
139 \fi
140 }
141 \newcommand{\qrauthor}[1] {%
142 \renewcommand\@qrauthor{#1}
143 }
144 \/ct\
```

\courseversion This macro sets the \@courseversion tag that later will be used on the title page and in the header/footer.

```
145 \*ct  
146 \newcommand{\@courseversion}{}
147 \newcommand{\courseversion}[1]{\renewcommand{\@courseversion}{#1}}
148 \*/ct
```

This macro sets the \@versionyear tag that later will be used on the title page and in the copyright message. 149 (*ct)

```
150 \newcommand{\@versionyear}{}
151 \newcommand{\versionyear}[1]{\renewcommand{\@versionyear}{#1}}
152 (/ct)
```

\publisher This macro sets the \Opublisher tag that later will be used on the title page.

```
153 (*ct)
154 \newcommand{\@publisher}{Cursusdienst\\
155 UNIVERSITAS\\
156 Prinsesstraat 16\\
157 2000 Antwerpen\\
158 T +32 3 233 23 72\\
159 F + 32 3 233 65 81\\
160 E info@cursusdienst.be\\
161 W www.cursusdienst.be}
162 \end{\publisher} [1] {\tt \end{\publisher} {\tt \#1}} \\
163 (/ct)
```

This macro sets the \@publishercode tag that later will be used on the title page. \publishercode

```
164 (*ct)
165 \newcommand{\@publishercode}{}
166 \newcommand{\publishercode}[1]{\renewcommand{\@publishercode}{#1}}
```

\lecturer This macro sets many \@lecturer tags (max. 4) that later will be used on the title page. If there is only one teaching lecturer one can use the convenient shorthand without counter. In case the lecturer's name contains accented characters, you also need to provide a qr version in full unicode (so without the traditional IATEX accented characters.

```
168 (*ct)
169 \newcommand{\@lectureri}{}
170 \newcommand{\@lecturerii}{}
171 \newcommand{\@lectureriii}{}
172 \newcommand{\@lectureriv}{}
173 \newcommand{\@qrlectureri}{}
174 \newcommand{\@qrlecturerii}{}
175 \newcommand{\@qrlectureriii}{}
176 \newcommand{\@qrlectureriv}{}
177 \newcommand{\lecturer}[1]{
     \renewcommand{\@lectureri}{#1}
178
     \ifx\@qrlectureri\@emptymacro
179
180
     \renewcommand\@qrlectureri{#1}
181
     \fi
```

```
182 }
183 \newcommand{\qrlecturer}[1]{
     \renewcommand\@qrlectureri{#1}
184
185 }
186 \newcommand{\lectureri}[1]{
187
     \renewcommand{\@lectureri}{#1}
188
     \ifx\@qrlectureri\@emptymacro
     \renewcommand\@qrlectureri{#1}
189
190
191 }
192 \newcommand{\qrlectureri}[1]{
     \renewcommand\@qrlectureri{#1}
193
194 }
195 \newcommand{\lecturerii}[1]{
     \renewcommand{\@lecturerii}{#1}
196
     \ifx\@qrlecturerii\@emptymacro
197
     \renewcommand\@qrlecturerii{#1}
198
     \fi
199
200 }
201 \newcommand{\qrlecturerii}[1]{
     \renewcommand\@qrlecturerii{#1}
202
203 }
204 \mbox{ } \mbox{lectureriii}[1]{
     \renewcommand{\@lectureriii}{#1}
205
     \ifx\@qrlectureriii\@emptymacro
206
207
     \renewcommand\@qrlectureriii{#1}
     \fi
208
209 }
210 \label{lem:lemmand} $$210 \ensuremath{\mbox{newcommand}(\mbox{qrlectureriii})[1]{}} $$
     \renewcommand\@qrlectureriii{#1}
211
212 }
213 \newcommand{\lectureriv}[1]{
214
     \renewcommand{\@lectureriv}{#1}
     \ifx\@qrlectureriv\@emptymacro
215
216
     \renewcommand\@qrlectureriv{#1}
217
218 }
219 \newcommand{\qrlectureriv}[1]{
220
     \renewcommand\@qrlectureriv{#1}
221 }
222 (/ct)
```

\supervisor This macro sets many \@supervisor tags (max. 4) that later will be used on the title page. If there is only one supervisor one can use the convenient shorthand without counter.

```
223 (*mt)
224 \newcommand{\@supervisori}{}
225 \newcommand{\@supervisorii}{}
226 \newcommand{\@supervisoriii}{}
```

```
227 \newcommand{\@supervisoriv}{}
228 \newcommand{\supervisori}[1] {\renewcommand{\@supervisori}{#1}}
229 \newcommand{\supervisori}[1] {\renewcommand{\@supervisorii}{#1}}
230 \newcommand{\supervisorii}[1] {\renewcommand{\@supervisorii}{#1}}
231 \newcommand{\supervisoriii}[1] {\renewcommand{\@supervisoriii}{#1}}
232 \newcommand{\supervisoriv}[1] {\renewcommand{\@supervisoriv}{#1}}
233 \/mt\
```

\programme This macro sets the \@programme tags that later will be used on the title page. The involved way of repeatedly calling the renewcommand to set the tags is required for inclusion of the data as QR data.

```
234 (*ct)
235 \newcommand{\@programmet}{} % type
236 \newcommand{\@programmec}{} % class
237 \newcommand{\@programmecqr}{} % class for qr code
238 \newcommand{\@programmes}{} % class
239 \newcommand{\@programmeq}{} \% qualifier
240 \newcommand{\programme}[3]{%
241
       \left( \frac{\pi}{\pi}\right) 
       {\renewcommand{\@programmet}{Bachelor of Science in de }}{%
242
       \left( \frac{\#1}{MA} \right)
243
       {\renewcommand{\@programmet}{Master of Science in de }}{%
244
       \left( \frac{\#1}{VP} \right)
245
       {\renewcommand{\@programmet}{Voorbereidingsprogramma voor Master of Science in de }}{%
246
       \left( \frac{\#1}{SP} \right)
247
       {\renewcommand{\@programmet}{Schakelprogramma voor Master of Science in de }}{%
248
^{249}
       \ifthenelse{\equal{#1}{FREE}}%
250
251
       \errmessage{Error in 1st arg of macro programme[3]: invalid
252
         programme type!}}}}}%
253
       \left\{ \frac{\#2}{IW} \right\}
254
       {\renewcommand{\@programmec}{industri\"ele wetenschappen}
255
        \renewcommand{\@programmecqr}{industrile wetenschappen}}{
256
       \left( \frac{42}{3} \right)
257
258
       }{}
       \errmessage{{Error in 2nd arg of macro programme[3]: invalid
259
         programme class! }}}}%
260
       %
261
       \left( \frac{\#3}{BK} \right)
262
       {\renewcommand{\@programmeq}{bouwkunde}}{%
263
264
       \left( \frac{\#3}{CH} \right)
265
       {\renewcommand{\@programmeq}{chemie}}{%
       \ifthenelse{\equal{#3}{BCH}}%
266
       {\renewcommand{\@programmeq}{biochemie}}{%
267
       \left( \frac{\#3}{EM} \right)
268
269
       {\renewcommand{\@programmeq}{elektromechanica}}{%
       \ifthenelse{\equal{#3}{EI}}%
270
```

```
271
       {\renewcommand{\@programmeq}{elektronica-ICT}}{%
272
       \left( \frac{\#3}{}\right) 
       {}{%
273
       \left\{ \left( \frac{\#1}{FREE} \right) \right\}
274
       {\tt \{\normand{\normand{\#3}}} \{
275
276
       \errmessage{Error in 3rd arg to macro programme[3]: invalid
277
         programme qualifier}}}}}}}
278
       \left( \frac{\#2}{IW} \right) 
279
       {\renewcommand{\@programmes}{: }}{}
280
281 }
282 (/ct)
```

This macro sets many \@coursecode and \@course tags (max. 4) that later will be used on the title page. If there is only one course code one can use the convenient shorthand without counter.

```
283 (*ct)
284 \newcommand{\@coursecodei}{}
285 \newcommand{\@coursecodeii}{}
286 \newcommand{\@coursecodeiii}{}
287 \newcommand{\@coursecodeiv}{}
288 \newcommand{\@coursei}{}
289 \newcommand{\@courseii}{}
290 \newcommand{\@courseiii}{}
291 \newcommand{\@courseiv}{}
292 \newcommand{\@qrcoursei}{}
293 \newcommand{\@qrcourseii}{}
294 \newcommand{\@qrcourseiii}{}
295 \newcommand{\@qrcourseiv}{}
296 \newcommand{\course}[2]{
     \renewcommand{\@coursecodei}{#1}
297
     \renewcommand{\@coursei}{#2}
298
     \ifx\@qrcoursei\@emptymacro
299
     \renewcommand{\@qrcoursei}{#2}
300
301
302 }
303 \newcommand{\qrcourse}[1]{
304
     \renewcommand{\@qrcoursei}{#1}
305 }
306 \newcommand{\coursei}[2]{
     \renewcommand{\@coursecodei}{#1}
307
     \renewcommand{\@coursei}{#2}
308
     \ifx\@qrcoursei\@emptymacro
309
     \renewcommand{\@qrcoursei}{#2}
310
311
312 }
313 \newcommand{\qrcoursei}[1]{
     \renewcommand{\@qrcoursei}{#1}
315 }
```

```
\renewcommand{\@qrcourseii}{#1}
         324
         325 }
         326 \newcommand{\courseiii}[2]{
         327
               \renewcommand{\@coursecodeiii}{#1}
               \renewcommand{\@courseiii}{#2}
         328
               \ifx\@qrcourseiii\@emptymacro
         329
               \renewcommand{\@qrcourseiii}{#2}
         330
               \fi
         331
         332 }
         333 \newcommand{\qrcourseiii}[1]{
               \renewcommand{\@qrcourseiii}{#1}
         335 }
         336 \newcommand{\courseiv}[2]{
               \renewcommand{\@coursecodeiv}{#1}
         337
               \renewcommand{\@courseiv}{#2}
         338
               \ifx\@qrcourseiv\@emptymacro
         339
         340
               \renewcommand{\@qrcourseiv}{#2}
         341
               \fi
         342 }
         343 \newcommand{\qrcourseiv}[1]{
               \renewcommand{\@qrcourseiv}{#1}
         344
         345 }
         346 \langle /ct \rangle
\diploma This macro sets the \@diploma tags that later will be used on the title page.
         347 (*mt)
         348 \mbox{ }\mbox{\em ERROR}
         349 \newcommand{\diploma}[1]{
               \newcommand{\MoSIW}{Master of Science in de industri\"ele wetenschappen}
         350
               \renewcommand{\@diploma}{
         351
                 \ifthenelse{\equal{#1}{MA-IW-BK}}
         352
                                        {\MoSIW: bouwkunde}{
         353
                 \ifthenelse{\equal{#1}{MA-IW-BCH}}
         354
         355
                                        {\MoSIW: biochemie}{
                 \ifthenelse{\equal{#1}{MA-IW-CH}}
         356
         357
                                        {\MoSIW: chemie}{
                 \ifthenelse{\equal{#1}{MA-IW-EI}}
         358
                                        {\MoSIW: elektronica-ICT}{
         359
                 \ifthenelse{\equal{#1}{MA-IW-EI-AE}}
         360
         361
                                         {\MoSIW:\\elektronica-ICT, afstudeerrichting automotive engineering}{
         362
                 \ifthenelse{\equal{#1}{MA-IW-EI-ICT}}
```

316 \newcommand{\courseii}[2]{

323 \newcommand{\qrcourseii}[1]{

317

318

319

 $\frac{320}{321}$

322 }

\fi

\renewcommand{\@coursecodeii}{#1}

\renewcommand{\@courseii}{#2}

\renewcommand{\@qrcourseii}{#2}

\ifx\@qrcourseii\@emptymacro

```
{\MoSIW:\\elektronica-ICT, afstudeerrichting ICT}{
                                                                           363
                                                                                                          \ifthenelse{\equal{#1}{MA-IW-EM-AE}}
                                                                           364
                                                                                                                                                                                                     {\tt \{\MoSIW:\label{thmosiwe} automotive engineering}}
                                                                           365
                                                                                                          \ifthenelse{\equal{#1}{MA-IW-EM-AU}}
                                                                           366
                                                                                                                                                                                                       {\MoSIW\\elektromechanica, afstudeerrichting automatisering}{
                                                                           367
                                                                           368
                                                                                                          \ifthenelse{\equal{#1}{MA-IW-EM-EM}}
                                                                           369
                                                                                                                                                                                                     {\MoSIW\\elektromechanica, afstudeerrichting elektromechanica}
                                                                                                          {\errmessage{Error in argument to macro diploma: must be one of MA-IW-XXX with XXX one of B
                                                                           370
                                                                           371 }
                                                                           372 }
                                                                           373 (/mt)
                     \defensedate This macro sets the \@defensedate tags that later will be used on the title page.
                                                                           374 (*mt)
                                                                           375 \newcommand{\@defensedate}{ERROR}
                                                                           376 \mbox{ } \mbox{
                                                                           377 (/mt)
    \defenselocation This macro sets the \Odefenselocation tags that later will be used on the title
                                                                               page.
                                                                           378 (*mt)
                                                                           379 \newcommand{\@defenselocation}{Antwerpen}
                                                                           380 \end{\enselocation} [1] {\tt \enselocation} 
                                                                           381 (/mt)
                \academicyear This macro sets the \@academicyear tag that later will be used on the title page.
                                                                           382 (*ct | mt)
                                                                           383 \newcommand{\@academicyear}{XXX-YYYY}
                                                                           384 \newcommand{\academicyear}[1]{\renewcommand{\Qacademicyear}{\#1}}
                                                                           385 (/ct | mt)
\copyrightnotices
                                                                           386 (*ct)
                                                                           387 \newcommand{\@copyrightnotices}{}
                                                                           388 \newcommand{\copyrightnotices}[1]{\renewcommand{\@copyrightnotices}{#1}}
                                                                           389 (/ct)
                                                                                                          Header and Footer
                                                                               5.6
```

The fancyhdr package is used to make a decent header ander footer. The header and footer of the uacoursetext package are defined to be:

```
390 \langle *ct \rangle
391 \backslash if@twoside
```

```
392 \lhead[\thepage] {\slshape\rightmark}
393 \chead[]{}
394 \label{leftmark} {\tt head[\slshape\leftmark]{\tt thepage}}
395 \lfoot[Universiteit Antwerpen -- \@facultyacronym]{\@courseversion}
396 \cfoot[]{}
397 \end{figure} $$ 397 \end{figure} {\cotened} $$ 397 \end{figure} $$ ---- \cotened
399 \lhead[]{\leftmark}
400 \chead[]{}
401 \rightarrow []{\theta}
402 \lceil (0courseversion) \rceil
403 \cfoot[]{UA--\@facultyacronym}
404 \r[ {\c} {\c}
405 \fi
406 (/ct)
The header and footer of the uamasterthesis package are defined to be:
407 (*mt)
408 \if@twoside
409 \lhead[\thepage]{\slshape\rightmark}
410
     \chead[]{}
412 \lfoot[Universiteit Antwerpen -- \@facultyacronym]{}
413 \cfoot[]{}
414 \rfoot[]{\@title{}}
415 \ensuremath{\setminus} else
416 \lhead[]{\leftmark}
417 \chead[]{}
418 \rhead[]{\thepage}
419 \lfoot[]{}
    \cfoot[]{UA--\@facultyacronym}
420
421 \rfoot[]{\@title{}}
422 \fi
423 (/mt)
Some common code remains:
424 (*ct | mt)
425 \mbox{ } \mbox{newcommand{\headrulewidth}{1pt}}
426 \renewcommand{\footrulewidth}{1pt}
427 \pagestyle{fancy}
428 \ifOfilled\else
429
    \raggedright
430 \fi
431 \raggedbottom
432 \pagenumbering{arabic}
433 \onecolumn
434 (/ct | mt)
```

5.7 Copyright notice

\@crnotice

```
435 (*ct)
436 \newcommand{\@crnotice}{
     This document has been typeset using \LaTeX{} and the
438
     \texttt{uacoursetext} class.\\
     \@copyrightnotices
439
440
441
     \@courseversion
442
     CONFIDENTIAL AND PROPRIETARY.
443
444
     \copyright{} \@versionyear{} Universiteit Antwerpen, All rights reserved.
445
446 }
447 (/ct)
```

5.8 Title page

\maketitle The title page is generated using the \maketitle command. As the book class from which we inherit already defines this command, we need to renew it.

> The UA house style works with large-radius circles. We need some math in order to calculate center points an radiuses

> Header circle: the blue header-circle on top of the page. We calculate the center point and the radius based on:

- the fact that the center point is above the page's left edge;
- the distance of the intersection points at the left and right edge of the page with respect to the top of the page, X and Y respectively;
- the width of the page W.

Some simple trigonometry leads to the elevation of the center point above the top of the page Q and the radius R:

$$R = \frac{W^2 + (X - Y)^2}{2(X - Y)}$$
 (1)

$$Q = R - X$$
 (2)

$$Q = R - X \tag{2}$$

We labeled the variables in the code below with a prefix ua@ and a suffix h (from 'header'). We also took the paperheight into account (the page's coordinate system origins at the left bottom. Therefore:

```
448 \end{tabular} \begin{tabular}{ll} & 448 \end{tabular} & 449 \end{tabular} & 449 \end{tabular} & 449 \end{tabular} & 449 \end{tabular} & 450 \end{tabular} & 451 \end{tabular} & 451 \end{tabular} & 452 \end{tabular} & 452 \end{tabular} & 452 \end{tabular} & 453 \end{tabular} & 453 \end{tabular} & 454 \end{tabular} & 454 \end{tabular} & 455 \end{tabular} & 455
```

Bottom circle A: the bottom circle with the largest radius. We calculate the center point and the radius based on:

- the fact that the center point is at a distance of 3/5 page width from the right page edge. We denote that distance as W;
- the fact that the horizontal bottom tangent line of the circle is at a specific height above the bottom page edge, labeled S;
- the distance of the intersection points at the right edge of the page with respect to the horizontal bottom tangent line of the circle, denoted as X Y.

Given these definitions, almost the same equations as for the header circle hold:

$$R = \frac{W^2 + (X - Y)^2}{2(X - Y)} \tag{3}$$

$$Q = R + S \tag{4}$$

with R the circle's radius, and Q the elevation of the center point above the page's bottom.

We labeled the variables in the code below with a prefix ua@ and a suffix ba (from 'bottom a'). Therefore:

```
456 \ensuremath{\column{2}{0.4*\paperwidth}} \\ 457 \pgfmathsetmacro{\ua@Sba}{0.125*\paperheight}} \\ 458 \pgfmathsetmacro{\ua@XMYba}{0.02\paperheight}} \\ 460 \pgfmathsetmacro{\ua@Rba}{0.5*\ua@Wba/\ua@XMYba*\ua@Wba+0.5*\ua@XMYba}} \\ 461 \pgfmathsetmacro{\ua@Qba}{\ua@Rba+\ua@Sba}} \\ 462 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}}} \\ 462 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}} \\ 462 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}}} \\ 462 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}}} \\ 462 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}}} \\ 463 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}}} \\ 464 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba}}} \\ 465 \ensuremath{\column{2}{0.5*\ua@Rba+\ua@Sba+\ua@Sba+\ua@Rba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@Sba+\ua@S
```

Bottom circle B: the bottom circle with the smallest radius. The same reasoning leads to:

```
463 \ensuremath{\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle$}\mbox{$\langle
```

```
467 \pgfmathsetmacro{\ua@Rbb}{0.5*\ua@Wbb/\ua@XMYbb*\ua@Wbb+0.5*\ua@XMYbb}}
468 \pgfmathsetmacro{\ua@Qbb}{\ua@Rbb+\ua@Sbb}
469 \langle /\text{ct} \mid \text{mt} \rangle
 Text alignment': The text is aligned around an imaginary vertical line around
 2/5 page width distance from the left edge.
470 \langle *ct \mid mt \rangle
471 \pgfmathsetmacro{\ua@l1}{0.15*\paperwidth}
472 \neq 472 
473 \pgfmathsetmacro{\ua@d}{0.1in}
474 \pgfmathsetmacro{\ua@rr}{0.85*\paperwidth}
475 \langle /ct \mid mt \rangle
 Below, one can find the code for the title page of the uacoursetext class:
476 (*ct)
477 \newcommand\sprtr{ / }
478 \newcommand\myqrdata{
479 I: Universiteit Antwerpen\string\n
480 F: \@qrfaculty\string\n
481 P: \@programmet \@programmecqr \@programmeq\string\n
482 C: \@coursecodei \@qrcoursei
483 \slash sprtr
484 \@coursecodeii \@qrcourseii
485 \sprtr
486 \@coursecodeiii \@qrcourseiii
487\sprtr
488 \@coursecodeiv \@cqrourseiv
489 \string\n
490 Y: \@academicyear\string\n
491 T: \@qrtitle\string\n
492 S: \@qrsubtitle\string\n
493 A: \@qrauthor\string\n
494 L: \@qrlectureri
495 \sprtr
496 \@qrlecturerii
497\sprtr
498 \@qrlectureriii
499 \sprtr
500 \@qrlectureriv}
501 \newsavebox{\myqrcode}
502 \renewcommand\maketitle{%
     \pagestyle{empty}
503
     \begin{titlepage}
504
505
       \if@qr
       \savebox{\myqrcode}[2.7in][t]{
506
         \begin{pspicture}(2.7in,2.7in)
507
```

466 \pgfmathsetmacro{\ua@XMYbb}{0.06\paperheight}

```
\psbarcode{\myqrdata}{version=22 encoding=byte eclevel=M}{qrcode}
508
         \end{pspicture}
509
       }
510
       \else
511
       \savebox{\myqrcode}[2.7in][t]{}
512
513
514
       \if@titlepagetableonly
515
       Dit is een cursustekst van Universiteit Antwerpen. \\
       Het titelblad dient opgemaakt te worden met de volgende gegevens:
516
       \begin{center}
517
         \begin{tabular}{|1|1|}
518
           \hline
519
           \bfseries I & Universiteit Antwerpen \\hline
520
           \bfseries F & \@faculty \\hline
521
           \bfseries P & \parbox[t]{14cm}{\@programmet
522
             \@programmec\@programmeq} \\\hline
523
           \bfseries C & \parbox[t]{14cm}{
524
             \texttt{\@coursecodei} \@coursei\\
525
526
             \texttt{\@coursecodeii} \@courseii\\
527
             \texttt{\@coursecodeiii} \@courseiii\\
             \texttt{\@coursecodeiv} \@courseiv} \\\hline
528
           \bfseries Y & \@academicyear \\\hline
529
           \bfseries T & \parbox[t]{14cm}{\@title}\\hline
530
           \bfseries S & \parbox[t]{14cm}{\@subtitle}\\\hline
531
           \bfseries A & \parbox[t]{14cm}{\@author}\\hline
532
           \bfseries L & \parbox[t]{14cm}{\@lectureri\\
533
                                           \@lecturerii\\
534
                                           \@lectureriii\\
535
                                           \@lectureriv} \\hline
536
         \end{tabular}
537
       \end{center}
538
539
       ~\\
540
       Waarbij: I = instelleng, F = faculteit, P = programma, C =
       cursusmodule, T = titel, S = subtitel, A = auteur(s), L =
541
       lesgever(s)\\~\\
542
       Deze informatie is ook gecodeerd in de onderstaande QR-code.\\
543
       \if@qr
544
       \vspace*{1cm}
545
       \usebox{\myqrcode}
546
547
548
       \else
       \AddToShipoutPicture*{%
549
         \setlength{\unitlength}{1cm}
550
         \put(0,0){%
551
552
           \begin{tikzpicture}[inner sep=0pt]
553
             \clip (0,0) rectangle(\paperwidth,\paperheight);
554
             \if@titlepagenoartwork\else
555
             \filldraw [uacorpbord] (0.55\paperwidth,\ua@Qba pt) circle (\ua@Rba pt);
             \filldraw [white] (0.35\paperwidth,\ua@Qbb pt) circle (\ua@Rbb pt);
556
             \filldraw [uacorpblue] (0,\ua@Qh pt) circle (\ua@Rh pt);
557
```

```
\path
558
              (0.95\paperwidth,0.1\paperheight)
559
             node [anchor=north east] {
560
               \includegraphics[width=0.25\paperwidth]{ua_color}};
561
             \fi
562
             \path
563
564
              (\ua@l pt -\ua@d pt,0.77\paperheight)
565
             node [anchor=north east, text width=0.35\paperwidth] {
               \begin{flushright}
566
                 UNIVERSITEIT ANTWERPEN\\~\\
567
                 Academiejaar \@academicyear
568
569
               \end{flushright}}
              (\ua@l pt +\ua@d pt,0.65\paperheight)
570
             node [anchor = north west, text width = 0.55\paperwidth] {
571
               {\large \@faculty{}}\\[0.05\paperheight]
572
               573
               {\Large \bf \@subtitle{}}\\[3ex]
574
               {\Large \bf \@author{}}}
575
576
              (\ua@l pt +\ua@d pt,0.45\paperheight)
577
             node [anchor = north west, text width = 0.55\paperwidth] {
578
               \@lectureri~\\
               \@lecturerii~\\
579
               \@lectureriii~\\
580
               \@lectureriv}
581
              (\ua@l pt +\ua@d pt,0.35\paperheight)
582
             node [anchor = north west, text width = 0.55\paperwidth] {
               {\bf \@programmet \\ \@programmec\@programmes \@programmeq}}
584
              (\ua@l pt +\ua@d pt,0.30\paperheight)
585
             node [anchor = north west, text width = 0.55\paperwidth] {
586
               \texttt{\@publishercode}~\\~\\
587
               \texttt{\@coursecodei{}} \@coursei~\\
588
589
               \texttt{\@coursecodeii{}} \@courseii~\\
590
               \texttt{\@coursecodeiii{}} \@courseiii~\\
               \texttt{\@coursecodeiv{}} \@courseiv}
591
              (\ua@l pt - 2\ua@d pt, 0.368\paperheight)
592
             node [anchor = north east, text width = 0.35\paperwidth] {
593
               {\normalsize\begin{flushright}
594
595
                   \@publisher{}
596
                 \end{flushright}};
           \end{tikzpicture}
597
598
         }
       }%
599
       \phantom{Do not remove: this causes an empty title page to be
600
         generated}
601
602
       \fi
603
     \end{titlepage}%
604
     \clearpage
605
     \if@copyright
     \AddToShipoutPicture{
606
607
       \put(0,0){%
```

```
\begin{tikzpicture}[inner sep=0pt]
608
609
            \clip (0,0) rectangle(\paperwidth,\paperheight);
            \path
610
            (0.5\paperwidth,0.5\paperheight)
611
           node [anchor=center, rotate=55, color=lightgray] {
612
613
              \Huge Copyright Universiteit Antwerpen, All Rights Reserved
614
           };
         \end{tikzpicture}
615
       }
616
     }
617
     \fi
618
     \vspace*{\stretch{1}}
619
620
     \@crnotice
     \clearpage
621
     \setcounter{footnote}{0}%
622
     \global\let\thanks\relax
623
     \global\let\maketitle\relax
624
     \global\let\@thanks\@empty
625
626
     \global\let\title\relax
627
     \global\let\author\relax
     \global\let\date\relax
628
629
     \global\let\and\relax
630
     \pagestyle{fancy}
631
     \thispagestyle{empty}
632 }
633 (/ct)
Below, one can find the code for the final page of the uacoursetext class:
634 (*ct)
635 \newcommand\makefinalpage{
     \if@titlepagetableonly
636
637
     \else
     \if@gr
638
639
     \savebox{\myqrcode}{
       \begin{pspicture}(2.7in,2.7in)
640
          \psbarcode{\myqrdata}{version=22 encoding=byte eclevel=M}{qrcode}
641
       \end{pspicture}
642
     }
643
644
     \else
     \savebox{\myqrcode}[2.7in][t]{}
645
646
     \cleardoublepage
647
     \thispagestyle{empty}
648
     \AddToShipoutPicture*{%
649
       \setlength{\unitlength}{1cm}
650
651
       \put(0,0){%
652
         \begin{tikzpicture}[inner sep=0pt]
            \clip (0,0) rectangle(\paperwidth,\paperheight);
653
            \if@titlepagenoartwork\else
654
```

```
\filldraw [uacorpblue] (\paperwidth,\ua@Qh pt) circle (\ua@Rh pt);
655
            \fi
656
            \path
657
            (0.1\paperwidth,0.1\paperheight)
658
            node [anchor = south west, text width = 0.6\paperwidth] {
659
660
              CONFIDENTIAL AND PROPRIETARY\\~\\
661
              \copyright{} \@versionyear{} Universiteit Antwerpen,
662
              All rights reserved.}
            (0.9\paperwidth,0.1\paperheight)
663
            node [anchor = south east] {
664
              \if@qr
665
666
              \usebox{\myqrcode}
667
668
          \end{tikzpicture}
669
       }
670
     }
671
     \phantom{Do not remove: this causes an empty final page to be
672
673
       generated}
674
     \fi
675 }
676 (/ct)
 And next, the code for the title page of the uamasterthesis class:
677 (*mt)
678 \renewcommand\maketitle{%
     \pagestyle{empty}
     \begin{titlepage}
680
        \AddToShipoutPicture*{%
681
          \setlength{\unitlength}{1cm}
682
          \begin{array}{c} \text{put}(0,0) {\%} \end{array}
683
            \begin{tikzpicture}[inner sep=0pt]
684
              \clip (0,0) rectangle(\paperwidth,\paperheight);
685
              \if@titlepagenoartwork\else
686
              \filldraw [lightgray] (0.55\paperwidth,\ua@Qba pt) circle (\ua@Rba pt);
687
              \filldraw [white] (0.35\paperwidth,\ua@Qbb pt) circle (\ua@Rbb pt);
688
689
              \filldraw [lightgray] (0,\ua@Qh pt) circle (\ua@Rh pt);
690
              \path
              (0.95\paperwidth,0.1\paperheight)
691
              node [anchor=north east] {
692
                \includegraphics[width=0.25\paperwidth]{ua_color}};
693
              \fi
694
              \path
695
              (\ua@ll pt,0.77\paperheight)
696
              node [anchor=north west, text width=0.7\paperwidth] {
697
                UNIVERSITEIT ANTWERPEN\\~\\
698
699
                Academiejaar \@academicyear\\~\\
700
                {\large \@faculty{}}\\~\\
                Masterproef\\[0.05\paperheight]
701
```

```
{\Large \bf \@title{}}}
702
             (\ua@11 pt,0.55\paperheight)
703
             node [anchor = north west, text width = 0.7\paperwidth] {
704
               {\langle \dot \rangle } 
705
               706
707
                 \textbf{Promotoren:}
708
                 & \@supervisori \\
                 & \@supervisorii \\
709
                 & \@supervisoriii \\
710
                 & \@supervisoriv
711
               \end{tabular}
712
713
             (\ua@11 pt,0.3\paperheight) node [anchor=north west, text width = 0.7\paperwidth] {%
               Proefschrift tot het behalen van de graad van\\
715
               \@diploma\\
716
               \@defenselocation, \@defensedate
717
             };
718
           \end{tikzpicture}
719
         }
720
721
722
       \phantom{Do not remove: this causes an empty title page to be
         generated}
723
     \end{titlepage}%
724
     \clearpage
725
726
     \setcounter{footnote}{0}%
727
     \global\let\thanks\relax
     \global\let\maketitle\relax
728
729
     \global\let\@thanks\@empty
     \global\let\title\relax
730
     \global\let\author\relax
731
732
     \global\let\date\relax
733
     \global\let\and\relax
734
     \pagestyle{fancy}
735
     \thispagestyle{empty}
736
     %
             \end{tikzpicture}
737
     %
     %
         }%
738
739
         \phantom{Do not remove: this causes an empty title page to be generated}
740
     % \end{titlepage}%
     % \if@twoside
741
742
     % \cleardoublepage
743
    % \else
    % \clearpage
744
    %\fi
745
746
    % \setcounter{footnote}{0}%
747
    % \global\let\thanks\relax
    % \global\let\maketitle\relax
748
749
    % \global\let\@thanks\@empty
    % \global\let\title\relax
750
    % \global\let\author\relax
```

```
% \global\let\date\relax
752
753
    % \global\let\and\relax
754 % \pagestyle{fancy}
755 % \thispagestyle{empty}
756
    }
757 (/mt)
Below, one can find the code for the final page of the uamasterthesis class:
758 \langle *mt \rangle
759 \newcommand\makefinalpage{
     \cleardoublepage
     \thispagestyle{empty}
761
     \AddToShipoutPicture*{%
762
       \setlength{\unitlength}{1cm}
763
       \put(0,0){%
764
         \begin{tikzpicture}[inner sep=0pt]
765
766
            \clip (0,0) rectangle(\paperwidth,\paperheight);
            \if@titlepagenoartwork\else
767
           \filldraw [lightgray] (\paperwidth,\ua@Qh pt) circle (\ua@Rh pt);
768
           \fi
769
         \end{tikzpicture}
770
       }
771
     }
772
     \phantom{Do not remove: this causes an empty final page to be
773
       generated}
774
775 }
776 (/mt)
5.9
       References
777 (*ct | mt)
778 \IfFileExists{varioref.sty}{\RequirePackage{varioref}}{}
779 (/ct | mt)
780 %
781 (*ct)
782 \IfFileExists{hyperref.sty}{
        \RequirePackage{hyperref}
783
784
       \hypersetup{
785
         backref=true,
         breaklinks=true,
786
```

787

788

789

790

791

792

793

794

colorlinks=true,

citecolor=black,

filecolor=black,

hyperindex=true,

linkcolor=black,

pageanchor=true,
pagebackref=true,

pagecolor=black,

```
795
          pdfpagemode=UseOutlines,
          urlcolor=black
796
        }
797
        \AtBeginDocument{
798
          \hypersetup{
799
800
            pdftitle={\@title},
801
            pdfsubject={\@subtitle},
            pdfauthor={\@author}
802
803
        }
804
805 }{}
806 (/ct)
807 %
808 %
809 (*mt)
810 \ \texttt{\loss} \{ \texttt{hyperref.sty} \} \{
        \RequirePackage{hyperref}
811
        \hypersetup{
812
813
          backref=true,
814
          breaklinks=true,
          colorlinks=true,
815
816
          citecolor=black,
          filecolor=black,
817
          hyperindex=true,
818
819
          linkcolor=black,
820
          pageanchor=true,
          pagebackref=true,
821
          pagecolor=black,
822
          pdfpagemode=UseOutlines,
823
          urlcolor=black
824
825
826
        \AtBeginDocument{
827
          \hypersetup{
            pdftitle={\@title},
828
829
            pdfsubject={Master's Thesis},
            pdfauthor={\@author}
830
831
        }
832
833 }{}
834 \langle /mt \rangle
```

Change History

v1.1	Made raggedright conditional on
General: Small bugfixes and 'filled'	option 'filled', because it can't
option $\dots \dots 1$	be undone 25
Added option user documenta-	\diploma: Fixed typo on pro-
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