# Instructions for Reports
# Computational Semantics LIX021M05

**First Author**
Student Number
email@domain

**Second Author**
Student Number
email@domain

## Abstract

This document contains the instructions for preparing reports required in the course LIX021M05 Computational Semantics. The document itself conforms to its own specifications, and is therefore an example of what your report should look like. Students are asked to conform to all the directions reported in this document: a separate title page with abstract and table of contents, and the main text printed in double column format.

## Contents

# 1 Introduction

The following instructions are directed to authors of reports submitted for the computational semantics course. All students are required to adhere to these specifications. Students are required to provide a Portable Document Format (PDF) version of their papers and upload these via Nestor. The aim of this document is to make it easier to submit a report in the required format.

This document contains first of all general formatting constructions. If you use LaTeX(strongly preferred), you can use the source of this document as a starting point. Secondly, general guidelines are given for writing your report.

# 2 Formatting Instructions

## 2.1 Document Preparation

It is strongly prefered that you prepare your PDF files using LaTeX with the official COLING 2016 style file (coling2016.sty) and bibliography style (acl.bst). These files are available in report.zip in the *Course Resources* folder at Nestor. You will also find the document you are currently reading (comsem.pdf) and its LaTeX source code (comsem.tex) in this zip archive. (You can alternatively use Microsoft Word to produce your PDF file but this is not recommended.)

For the production of the electronic manuscript you must use Adobe's Portable Document Format (PDF). PDF files are usually produced from LaTeX using the *pdflatex* command. If your version of LaTeX produces Postscript files, you can convert these into PDF using *ps2pdf* or *dvipdf*. On Windows, you can also use Adobe Distiller to generate PDF.

Please make sure that your PDF file includes all the necessary fonts (especially tree diagrams, symbols, and fonts with Asian characters). If you cannot meet the above requirements for the production of your electronic submission, please contact the the teacher of the course as soon as possible.

## 2.2 General Instructions

Manuscripts must be in double-column format, except for the title page. The title, student name(s), and student number(s) must be centred at the top of the first page (the title page). The title page should also contain an abstract and a table of contents. The title page is not numbered. The page following the title should be numbered page 1.

## 2.3 Layout

Format manuscripts with a single column to a page, in the manner these instructions are formatted. The exact dimensions for a page on A4 paper are shown in Table 1.

Table 1: Dimensions.

| Type | Measure |
|---|---|
| Left and right margins | 2.5 cm |
| Top margin | 2.5 cm |
| Bottom margin | 2.5 cm |
| Width | 16.0 cm |
| Height | 24.7 cm |

Papers should not be submitted on any other paper size. If you cannot meet the above requirements for the production of your electronic submission, please contact the teacher as soon as possible.

## 2.4 Fonts

For reasons of uniformity, Adobe's **Times Roman** font should be used. In LaTeX2e this is accomplished by putting

```
\usepackage{times}
\usepackage{latexsym}
```

in the preamble. If Times Roman is unavailable, use **Computer Modern Roman** (LaTeX2e's default). Note that the latter is about 10% less dense than Adobe's Times Roman font.

Table 2: Font guide.

| Type of Text | Font Size | Style |
|---|---|---|
| paper title | 15 pt | bold |
| author names | 12 pt | bold |
| the word "Abstract" | 12 pt | bold |
| section titles | 12 pt | bold |
| document text | 11 pt | |
| captions | 11 pt | |
| sub-captions | 9 pt | |
| abstract text | 10 pt | |
| bibliography | 10 pt | |
| footnotes | 9 pt | |

## 2.5 Footnotes

Put footnotes at the bottom of the page and use 9 pt text. They may be numbered or referred to by asterisks or other symbols.[1] Footnotes should be

[1] This is how a footnote should appear.

separated from the text by a line.[2]

## 3 The Title Page

The title page contains the title, name of the author(s), an abstract, and a table of contents. It should not exceed one page.

### 3.1 Title and Author

Centre the title, author's name(s) and student number(s) across the page. Place the title centred at the top of the first page, in a 15 pt bold font. (For a complete guide to font sizes and styles, see Table 2) Long titles should be typed on two lines without a blank line intervening. Approximately, put the title at 2.5 cm from the top of the page, followed by a blank line, then the author's names(s), and the student number on the following line. Do not use only initials for given names (middle initials are allowed).

### 3.2 Abstract

Type the abstract between addresses and main body. The width of the abstract text should be smaller than main body by about 0.6 cm on each side. Centre the word **Abstract** in a 12 pt bold font above the body of the abstract. The abstract should be a concise, informative summary of the general thesis and conclusions of the paper. It should be no longer than 200 words. The abstract text should be in 10 pt font.

### 3.3 Table of Contents

Include a table of contents on the title page. Do not include tables of figures or tables.

## 4 Main Parts

### 4.1 Sections

The main body of the text should observing the double-column format as shown in the present document and include page numbers. Use 11 pt for text and subsection headings, and 12 pt for section headings. Type and label section and subsection headings in the style shown on the present document. Use numbered sections (Arabic numerals) in order to facilitate cross references. Number subsections with the section number and the subsection number separated by a dot, in Arabic numerals. Do not number subsubsections.

Usual sections of a report comprise an introduction, a section describing related work and/or background, a section describing the methodology used, a section reporting the results obtained, a section discussing the results, and a conclusion. Hence, a typical structure could be:

1. Introduction
2. Background and Related Work
3. Method and Data
4. Results and Discussion
5. Conclusion and Future Work

Note that the first chapter, the introduction, should comprise the aim of your research (motivation) and the specific objections that you want to meet (the research questions). The last chapter, the conclusion, should provide answers to the research questions posed in the introduction. The abstract should summarize the entire report, and therefore should contain elements of all five parts shown above.

### 4.2 Tables and Figures

Place figures, tables, and photographs in the paper near where they are first discussed, rather than at the end, if possible. Colour illustrations are discouraged, unless you have verified that they will be understandable when printed in black ink. Figure 1 illustrates how an image is included in a report. Very wide figures can be spread over the entire page width, as shown in Figure 2.

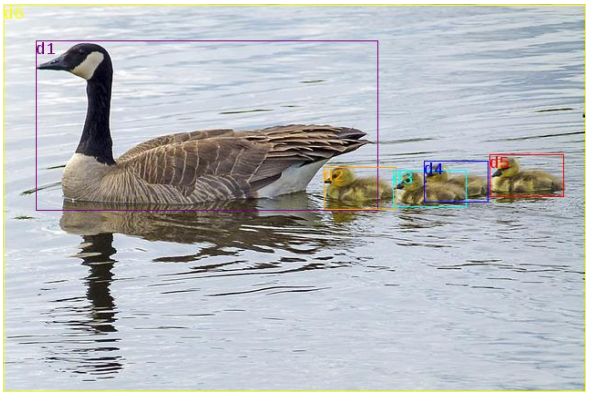


Figure 1: A figure showing an image.

Provide a caption for every illustration. Number each one sequentially in the form: "Figure 1. Caption of the Figure." "Table 1. Caption of the Table." Type the captions of the figures *below* the body of the figure, and the captions of tables *above* the body of the table (as shown, for example, in Table 1 and Table 2), using 11 pt text.

[2]Note the line separating the footnotes from the text.

```
model([d1,d2,d3,d5,d6,d7],
      [f(1,n_woman_1,    [d1]),
       f(1,a_brown_1,    [d2]),
       f(1,n_hair_1,     [d2]),
       f(1,a_white_1,    [d3]),
       f(1,n_shirt_1,    [d3]),
       f(1,a_red_1,      [d5,d6]),
       f(1,n_apple_1,    [d6]),
       f(1,n_pear_1,     [d7]),
       f(1,n_lipstick_1, [d5]),
       f(2,s_part_of,    [(d2,d1)]),
       f(2,s_touches,    [(d1,d6),(d6,d1),(d1,d7),(d7,d1),(d1,d2),(d2,d1),(d1,d5),(d5,d1),(d1,d3),(d3,d1)]),
       f(2,s_supports,   [(d1,d3),(d1,d6),(d1,d7),(d1,d5)]),
       f(2,s_near,       [(d2,d1),(d3,d2),(d5,d1),(d6,d1),(d7,d1),(d1,d2),(d5,d2),(d1,d3),(d2,d3)])]).
```

Figure 2: A wide figure ranging over two columns.

### 4.3 Citations and References

Citations within the text appear in parentheses as (Bos, 2015) or, if the author's name appears in the text itself, as Bos (2015). Append lowercase letters to the year in cases of ambiguity. Treat double authors as in (Blackburn and Bos, 2005), but write as in (Monroe et al., 2016) when more than two authors are involved. Collapse multiple citations as in (Blackburn and Bos, 2005; Bos, 2015). Also refrain from using full citations as sentence constituents. So instead of

> "(Bos, 2015) showed that ..."

you should use:

> "Bos (2015) showed that ..."

If you are using the provided LaTeX and BibTeX style files, you can use the command `\newcite` to get "author (year)" citations.

Gather the full set of references together under the heading **References**; place the section before any Appendices, unless they contain references. Arrange the references alphabetically by first author, rather than by order of occurrence in the text. Provide as complete a citation as possible, using a consistent format, such as the one for *Computational Linguistics* or the one in the *Publication Manual of the American Psychological Association*. Use of full names for authors rather than initials is preferred. The LaTeX and BibTeX style files provided roughly fit the American Psychological Association format, allowing regular citations, short citations and multiple citations as described above.

### 4.4 Appendices

Use an appendix for long tables, manuals, large figures, and extracts of source code, that somehow do not fit on the main body of the report. Appendices should directly follow the text and the references on a new page. Letter them in sequence and provide an informative title.

## References


Patrick Blackburn and Johan Bos. 2005. *Representation and Inference for Natural Language. A First Course in Computational Semantics*. CSLI Publications.

Johan Bos. 2015. Open-domain semantic parsing with boxer. In Beáta Megyesi, editor, *Proceedings of the 20th Nordic Conference of Computational Linguistics (NODALIDA 2015)*, pages 301–304.

Will Monroe, Noah D. Goodman, and Christopher Potts. 2016. Learning to generate compositional color descriptions. In *Proceedings of the 2016 Conference on Empirical Methods in Natural Language Processing*, pages 2243–2248, Austin, Texas, November. Association for Computational Linguistics.

# A Source Code of $\alpha$-Conversion

```
:- module(alphaConversion,[alphaConvert/2,
                           alphabeticVariants/2]).

/*=========================================================================
   Alpha Conversion (introducing substitutions)
=========================================================================*/

alphaConvert(F1,F2):-
   alphaConvert(F1,[],[]-_,F2).

/*=========================================================================
   Alpha Conversion
=========================================================================*/

alphaConvert(X,Sub,Free1-Free2,Y):-
   var(X),
   (
      member(sub(Z,Y),Sub),
      X==Z, !,
      Free2=Free1
   ;
      Y=X,
      Free2=[X|Free1]
   ).

alphaConvert(Expression,Sub,Free1-Free2,some(Y,F2)):-
   nonvar(Expression),
   Expression = some(X,F1),
   alphaConvert(F1,[sub(X,Y)|Sub],Free1-Free2,F2).

alphaConvert(Expression,Sub,Free1-Free2,all(Y,F2)):-
   nonvar(Expression),
   Expression = all(X,F1),
   alphaConvert(F1,[sub(X,Y)|Sub],Free1-Free2,F2).

alphaConvert(Expression,Sub,Free1-Free2,lam(Y,F2)):-
   nonvar(Expression),
   Expression = lam(X,F1),
   alphaConvert(F1,[sub(X,Y)|Sub],Free1-Free2,F2).

alphaConvert(Expression,Sub,Free1-Free3,que(Y,F3,F4)):-
   nonvar(Expression),
   Expression = que(X,F1,F2),
   alphaConvert(F1,[sub(X,Y)|Sub],Free1-Free2,F3),
   alphaConvert(F2,[sub(X,Y)|Sub],Free2-Free3,F4).

alphaConvert(F1,Sub,Free1-Free2,F2):-
   nonvar(F1),
   \+ F1 = some(_,_),
   \+ F1 = all(_,_),
   \+ F1 = lam(_,_),
   \+ F1 = que(_,_,_),
   F1 =.. [Symbol|Args1],
   alphaConvertList(Args1,Sub,Free1-Free2,Args2),
   F2 =.. [Symbol|Args2].

/*=========================================================================
   Alpha Conversion (listwise)
=========================================================================*/

alphaConvertList([],_,Free-Free,[]).

alphaConvertList([X|L1],Sub,Free1-Free3,[Y|L2]):-
   alphaConvert(X,Sub,Free1-Free2,Y),
   alphaConvertList(L1,Sub,Free2-Free3,L2).

/*=========================================================================
   Alphabetic Variants
=========================================================================*/

alphabeticVariants(Term1,Term2):-
   alphaConvert(Term1,[],[]-Free1,Term3),
   alphaConvert(Term2,[],[]-Free2,Term4),
   Free1==Free2,
   numbervars(Free1,0,N),
   numbervars(Term3,N,M),
   numbervars(Term4,N,M),
   Term3=Term4.
```