# Philosophy 1115 (Logic) Homework Guidelines and Tips

January 12, 2016

# 1 Basic Guidelines for HW Submissions

## 1.1 Formatting Issues

### 1.1.1 Top Matter

- Homework assignments should have the following information at the top of the first page (preferably, in the top-right corner of the first page).

> Name:
> Other Group Members (if any):
> Date:

### 1.1.2 Organization and Legibility

- The model answers that Forbes gives in the text are a good *starting point* as models to follow. Try to organize your answers with *at least* as much clarity and formality as Forbes does in his answers. More complete and well-organized answers (even typed ones!) are always welcome, of course!

- All answers should be clear and legible. This means you should try to *avoid crossouts*. I urge you to work in *pencil*, and on scratch paper. Before you write down your final answer, you should be pretty sure it's what you intended.

- Make it clear what your *final* answer is, for each question.

- Please *staple* together all HW sheets (in their proper order).

## 1.2 Non-Formatting Issues

- *Do not leave HW's to the last minute.* The assignments are not going to be trivial. They will be time consuming, and they will often require significant thoughtfulness and care to be completed correctly.

- *Read what Forbes has to say very carefully.* My lectures will not always cover every detail discussed in the text. It is up to you to glean all relevant information from the text, before you try to tackle a homework assignment.

# 2 Specific Issues and Tips Concerning HW #2

## 2.1 Mistakes Involving '→' and '↔'

- Most of the mistakes on HW #2 will involve mis-translations of sentences involving '→' and '↔'.

- Here is a list of different English forms that *all* translate into LSL as $\ulcorner p \rightarrow q \urcorner$ (memorize these):

| ⌜if $p$ then $q$⌝ | ⌜$p$ only if $q$⌝ | ⌜$q$ if $p$⌝ | ⌜$p$ is sufficient for $q$⌝ |
|---|---|---|---|
| ⌜$q$ is necessary for $p$⌝ | ⌜$q$ provided $p$⌝ | ⌜$q$ whenever $p$⌝ | ⌜$p$ is contingent upon $q$⌝ |
| ⌜$p$ is conditional upon $q$⌝ | ⌜$p$ is dependent upon $q$⌝ | ⌜$p$ depends on $q$⌝ | ⌜$p$ leads to $q$⌝ |
| ⌜$p$ guarantees $q$⌝ | ⌜$p$ implies $q$⌝ | ⌜$p$ entails $q$⌝ | ⌜$p$ requires $q$⌝ |

- ⌜$p$ unless $q$⌝ translates into LSL as either ⌜$\sim q \to p$⌝ or ⌜$p \vee q$⌝.

- Here is a list of different English forms that *all* translate into LSL as ⌜$p \leftrightarrow q$⌝ (memorize these):

| ⌜$p$ if and only if $q$⌝ | ⌜$p$ just in case $q$⌝ | ⌜$p$ exactly when $q$⌝ |
|---|---|---|
| ⌜$p$ is necessary and sufficient for $q$⌝ | ⌜$p$ is *the one thing* that leads to $q$⌝ | ⌜$p$ when and only when $q$⌝ |

## 2.2 Other Common Mistakes Likely to be Seen on HW #2

- Use parens and brackets carefully.

  - '$A \mathbin{\&} B \mathbin{\&} C$' is NOT a sentence of LSL (*missing* parens — *parens are always required when more than two atomic sentences are involved — even when there is no ambiguity*).
  - Neither is '$A \mathbin{\&} B \to C$' (this one can have two *different meanings*, depending on where we put the missing pair of parens).
  - Neither is '$(\sim A) \vee B$' (*extra* parens around '$\sim A$' — *negation takes smallest possible scope*).

- Atomic sentences should always be *positive*. Avoid atoms like:

  - Van Gogh's pictures are *not* the most profound.
  - Smith is *dis*honest.

- Avoid *redundant* atoms. For instance, avoid having both of the following in your dictionary:

  - $A$: The government will rig the election.
  - $B$: The government will play fair. [Here, $B$ is just the *denial* of $A$, and can be expressed as '$\sim A$']

- Of course, atoms must *never* contain any sentential connectives (*e.g.*, 'depends on', 'but', 'if', *etc.*).

- Sometimes, the conclusion of an English argument is *its very first sentence.*

- Think through how you might express 'just one' or 'at least two', *etc.* in LSL

- When formatting truth-tables, make sure to place the atoms in *alphabetical order* (left-to-right).