

University of California, Los Angeles  
CS 289A Communication Complexity

*Instructor:* Alexander Sherstov  
*Scribe:* Ima Student  
*Date:* January 9, 2012

# LECTURE 15

## Instructions for Preparing Scribe Notes

Using the provided `\makeheader` command, customize the above header with your name, lecture date, lecture number, and lecture title. For example, the above header was generated by typing `\makeheader{Ima Student}{January 9, 2012}{15}{Instructions for Preparing Scribe Notes}`. Your scribe notes should start with a high-level description of the lecture, its goal and techniques, and how it fits in the broader context of the course. In particular, explain the relationship to the previous lecture if appropriate; feel free to refer to the material in previous scribe notes using theorem and page numbers. This high-level description should be two or three solid paragraphs in length.

### 15.1 Organization

Lecture proper should be presented in a sequence of sections. For example, you might choose to present preparatory work in one section, the main results in another section, and any generalizations or conclusions in a third section. Do *not* use any subdivisions within sections (subsections, subsubsections, etc.).

### 15.2 Some Do's

We all know from experience that a picture is worth a thousand words, so be generous with figures. Please be sure to include all the figures and drawings from my lecture, and feel free to include your own. See Figure 15.1 for an example usage of the figure environment. Write in complete sentences. Be sure to include all bibliographic references, like so [1]. The bibliography must be incorporated using BibTex. As with any writing, make sure to spell check your scribe notes. When finished, please send me the following files by email: your L<sup>A</sup>T<sub>E</sub>X source file (`.tex`), your bibliography file (`.bib`) if you used one, any figures (ideally in `.pdf` format), and the resulting typeset document (`.pdf`). Remember, preparing scribe notes is a valuable learning experience and one that allows you to internalize the material at a new level. Take pride in your work.



FIGURE 15.1: A triangle and a circle.

### 15.3 Some Don'ts

You must not change the format of the scribe notes in any way, including font type, font size, pagination, section numbering, margins, or bibliography style. No content should spill over into the margins. You must not use any  $\text{\LaTeX}$  packages that do not come with the standard  $\text{\LaTeX}$  installation in our department; as a matter of fact, you should not need to include any  $\text{\LaTeX}$  packages in addition to those already included in the template file.

### 15.4 Mathematical Environments

For your convenience, the scribe note style file comes with the following mathematical environments predefined: theorem, lemma, corollary, proposition, fact, claim, definition, example, assumption, remark, conjecture, open problem, problem. The environments are illustrated below. Please limit yourself to these environments alone.

THEOREM 15.1. *Statement here*

LEMMA 15.2. *Statement here*

COROLLARY 15.3. *Statement here*

PROPOSITION 15.4. *Statement here*

FACT 15.5. *Statement here*

CLAIM 15.6. *Statement here*

DEFINITION 15.7. Statement here

EXAMPLE 15.8. Statement here

ASSUMPTION 15.9. Statement here

REMARK 15.10. Statement here

CONJECTURE 15.11. Statement here

OPEN PROBLEM 15.12. Statement here

PROBLEM 15.13. Statement here

Note that  $\text{\LaTeX}$  automatically numbers these environments within the lecture number (15 in this case). The same applies to the numbering of pages (this page being page 15-3), figures (Figure 15.1 above), and equations:

$$a = a_1 + a_2 + \cdots + a_n. \tag{15.1}$$

For proofs, use the provided `proof` environment, illustrated below.

*Proof.* Proof goes here. □

## References

- [1] E. Kushilevitz and N. Nisan. *Communication complexity*. Cambridge University Press, 2nd edition, 2006.