Citing Sources

UT Martin Department of Mathematics & Statistics

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1. Introduction

It is absolutely essential that you properly cite sources in your work. To use copied material from a source without quotation marks or indenting (a block quotation), even if you name the source elsewhere, is plagiarism. The UT Martin Student Handbook [11, p. 17] states "suspension from the University is the expected penalty" for "plagiarism, cheating, and academic integrity issues." The UT Martin Faculty Handbook [12, sect. 5.5.2] states

> A professor has both the right and the obligation to deal fairly and aggressively with academic dishonesty when detected or observed. Subject to the provisions of Tennessee Regulation 1720-05-01,15 the teacher has the right to assign a final grade of F to any student guilty of cheating or plagiarism or to impose other reasonable academic penalties that reduce a student's grade on a project or for the course.

In other words: don't do it.

If you ever have any question about what or how to cite, ask your teacher.

If you can say, for example, that "I cut and pasted this proof from the web," and it is not presented as a cited quote, then you are saying "I deserve an F on this paper and probably in this course."

2. Citations

2.1. What not to cite

Outside of mathematics a standard rule is "if you copy more than three consecutive words from a source, it should be quoted and cited," but one way mathematics differs from most other fields is that we view mathematics as existing independently of the words used to describe it. This is one reason that published mathematical research papers rarely include quotes.

Before we discuss what to cite, we list two things not to cite.

Standard definitions: In mathematics, we are far more careful with definitions than virtually any other field, so most student papers will include a number of properly formatted definitions. However, it is traditional to not cite standard definitions (because they belong to no one). You might, *if it could be useful your reader,* mention several works with appropriate background information.

The well known: We do not cite sources for 'well known' theorems. This would include all of the standard theorems in your required courses. For example, we would not cite Thomas' Calculus for the statement of the Fundamental Theorem of Calculus. It is not his theorem and his wording is not any better than anyone else's. As a student it may be unclear if a concept is well known—ask your teacher.

As with almost all rules outside of mathematics proper, there are exceptions. If your work is expository or about the history/philosophy of mathematics, then you may have many direct quotations. For example, if you are studying the development of a theorem or definition, it will make sense to cite the exact wording of the same concept over time.[1]

Be careful with words. Even though we rarely cite sources for the well known, we must never include others' work in a way which implies it is ours.

2.2. What to cite

Above we listed a couple things we do not usually cite—cite everything else! Examples of what to cite include the following.

Direct quotations: Any direct quotation must be cited. For example, did you cut and paste this into your document? Did you type someone else's words from print or the web? Then it is a direct quotation and must be cited.

Always enclose verbatim quotations in quotation marks (`` ` `` and `' '`) or as a block quote (indented without quotation marks using `\begin{block}` and `\end{block}`).

Paraphrases and summaries: Changing just every third word or so does not make a work yours; that is at best an attempt to disguise plagiarism. Neither paraphrasing a work (restating what another said in your own words) nor summarizing a work makes it your own work. When you paraphrase or summarize another's work, include a citation.

Theorems and proofs: We do not cite standard theorems (e.g., the product rule). However, if the theorem is not your own, and is not well known, then you should cite a source. If you omit the proof, make sure the source you cite includes the proof. For example: "for a proof see Klambauer [7, Chpt. 3]."

As a student you should rarely give a verbatim copy of another's proof, but if you do, then you must properly quote and cite it! For example, you might write "the following proof, other than minor changes, is taken verbatim from Rudin [9, p. 148]." The goal as

[1] An example of this is Caldwell and Yeng's history of the definition of prime [1] and [2].

a student is to understand a proof well enough to write your own version, not because you memorized it, but because you understand it, then write down your own version at an appropriate level for your audience (usually your classmates).

Illustrations and examples: When you use pictures and illustrations unchanged from a source (book, web, ...), include appropriate credit (and make sure the citation is not distracting). Examples are not usually cited as long as you do not copy them verbatim. Instead, understand the example, then show this understanding by presenting your own example using different numbers or objects. If you do not use a new example, cite it.

You are likely to have a citation requirement in your course such as "cite at least six sources, three of which cannot be found online." Never add superfluous citations just to reach this number! Instead study your subject, see what others said about it, and make these citations all useful or meaningful.

Again: if you have any question about what or how to cite, ask your teacher.

2.3. How to Cite

In mathematics, we traditionally treat citations as part the sentence.

> According to Halmos [6], Klambauer's problem book [7] discusses the convergence of the sequence
>
> $$x, x^x, x^{x^x}, x^{x^{x^x}}, x^{x^{x^{x^x}}}, \ldots$$
>
> which Klambauer attributes to Euler [4].

Notice that even the last citation is part of the sentence structure, not appended to the sentence like a footnote.

We never pad the bibliography with sources that are not referred to in the paper. If we want to list other sources for a reader to consider (for further background or to explore the topic in more depth), we do so explicitly: "for more information on writing mathematics see [5, 8] and [10]."

3. The Bibliography

Bibliographies should be complete and consistent. Give all of the necessary information for each citation, and style them in a consistent way. An excellent way to do this in LaTeX is to use a `BibTeX` database to store the references (you should learn about this in Math 315). Google Scholar `https://scholar.google.com/` and MathSciNet `http://www.ams.org/mathscinet/` (which you should definitely use) both present citations in `BibTeX` format. Be careful with Google Scholar which, unlike MathSciNet, is a database populated by machines and untrained amateurs.[2]

[2]MathSciNet will also automatically use the appropriate journal abbreviations (see `http://www.ams.org/msnhtml/serials.pdf`).

Note that the LaTeX source for this work and its BibTeX bibliography are attached to this document as examples.

3.1. Writing URLs

Often when you search online, a search engine gives a URL which contains a great deal of information only of interest to the search engine or its advertising partners. For example, a Google search for the line in UT Martin's Faculty Handbook about plagiarism quoted above returned the following link (line breaks added).

```
https://www.google.com/url?q=http://www.utm.edu/departments/acadaff/
_docs/fachbook.pdf&sa=U&ved=0ahUKEwiRpPGu2YnLAhUJKiYKHVnkDwAQFggEMAA&
client=internal-uds-cse&usg=AFQjCNG4bEx6UoVzcts33G0ZeOksbSaw0w
```

Never use such a link in your paper—never!

Buried in this is the URL you really want: `http://www.utm.edu/departments/acadaff/_docs/fachbook.pdf`. The rest is just to track you and must be removed. This URL could further be shortened to just `utm.edu/departments/acadaff/_docs/fachbook.pdf`. If you do further shorten one URL, then shorten all URLs consistently.

Note: in LaTeX you should add `\usepackage{hyperref}` (or at least `\usepackage{url}`) to your paper's header. Then the citation to the Faculty Handbook above can be written as follows.

```
\url{http://www.utm.edu/departments/acadaff/_docs/fachbook.pdf}
```

Such tagged URLs will usually wrap appropriately. Also your urls, citations and references will be made into links when compiled to a `pdf` document.

3.2. Citing URLs

Most older `BibTeX` styles do not have a format for URLs so here we give a couple of suggestions.

If there is enough information, treat the linked text as an article or book. For example, papers from ArXiv are articles, so we would enter Caldwell & Yeng [3] as follows in the `BibTeX` file.

```
@ARTICLE{CX2012,
   author = {Caldwell, Chris~K. and Xiong, Yeng},
    title = "{What is the smallest prime?}",
  journal = {ArXiv e-print 1209.2007v2},
     year = 2012,
    pages = {11 pages},
     note = {available from \url{http://arxiv.org/abs/1209.2007v2}}
}
```

See the bibliography for how this looks with `amsplain` style.

Do your best to find who wrote the source you are citing and its date. For sources such as Wikipedia, this is hard (or impossible); so you might try a more generic approach. What follows is a way to cite the Wikipedia article on plagiarism [13].

```
@misc{wiki,
  author = {{Wikipedia Authors}},
  title = {Plagiarism},
  year = {2 May 2016},
  note={\url{https://en.wikipedia.org/wiki/Plagiarism}.
      Viewed 17 May 2016}
}
```

(Note the use of double brackets on the authors so it does not think 'Author' is Wikipedia's first name.)

Here is the `BibTeX` citation to the Student Handbook [11].

```
@misc{StuHand,
  author = {{UT Martin}},
  title = {Student {H}andbook},
  year = {2015},
  note = {\url{www.utm.edu/studenthandbook/student_handbook.pdf}.
     Viewed 21 Feb 2016.}
}
```

Again, always ask your teacher—what they want may vary. This is a basic lesson in life: do what the boss wants if you want to get paid.

References

[1] Chris K. Caldwell, Angela Reddick, Yeng Xiong, and Wilfrid Keller, *The history of the primality of one: a selection of sources*, J. Integer Seq. **15** (2012), no. 9, Article 12.9.8, 40, available from `https://cs.uwaterloo.ca/journals/JIS/VOL15/Caldwell2/cald6.html`.

[2] Chris K. Caldwell and Yeng Xiong, *What is the smallest prime?*, J. Integer Seq. **15** (2012), no. 9, Article 12.9.7, 14, available from `https://cs.uwaterloo.ca/journals/JIS/VOL15/Caldwell1/cald5.html`.

[3] Chris K. Caldwell and Yeng Xiong, *What is the smallest prime?*, ArXiv preprint 1209.2007 (2012), 11 pages, available from `http://arxiv.org/abs/1209.2007`.

[4] Leonhard Euler, *De formulis exponentialibus replicatis*, Acta Academiae Scientarum Imperialis Petropolitinae (1779), no. 1, 38–60, available from `https://math.dartmouth.edu/~euler/docs/originals/E489.pdf`.

[5] Paul R. Halmos, *How to write mathematics*, Enseignement Math. (2) **16** (1970), 123–152.

[6] _____, *The heart of mathematics*, Amer. Math. Monthly **87** (1980), no. 7, 519–524.

[7] Gabriel Klambauer, *Problems and propositions in analysis*, Lecture Notes in Pure and Applied Mathematics, vol. 49, Marcel Dekker, Inc., New York, 1979.

[8] Steven G. Krantz, *A primer of mathematical writing: Being a disquisition on having your ideas recorded, typeset, published, read and appreciated*, American Mathematical Soc., 1997.

[9] Walter Rudin, *Principles of mathematical analysis*, 3rd edition ed., International Series in Pure & Applied Mathematics, McGraw-Hill New York, 1976, ISBN: 978-0070542358.

[10] Norman E. Steenrod, *How to write mathematics*, American Mathematical Soc., Dec. 1973, ISBN: 978-0821800553.

[11] UT Martin, *Student Handbook*, 2015, `www.utm.edu/studenthandbook/student_handbook.pdf`. Viewed 21 Feb 2016.

[12] _____, *Faculty Handbook*, Spring 2015, `www.utm.edu/departments/acadaff/_docs/fachbook.pdf`. Viewed 21 Feb 2016.

[13] Wikipedia Authors, *Plagiarism*, 2 May 2016, `https://en.wikipedia.org/wiki/Plagiarism`. Viewed 17 May 2016.