

Guidelines for thesis writing and using the thesis template (master's/bachelor's level)

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1 Structure of the thesis

1.1 Structuring the body text

Make a clear structure for your document and write intelligibly. A clear and logical structure is essential for the reader's comprehension. Decide how to divide the text into different sections and what their headings will be. Use subheadings as necessary.

1.1.1 Make your headings descriptive

When given descriptive headings, the reader will be able to form a quick overview of the document's contents. Do not use more than three levels of hierarchy in your sections. Mark all headings using the style function on your software and give a logical structure to the different heading levels. Your software may label the main heading style as Heading 1, the subheading style as Heading 2, and the style of the subheadings of subheadings as Heading 3. Put your headings in sentence form, when possible, as they help reading comprehension. The word-processing instructions in these guidelines are based on Word 2016 (Office 365).

1. Write each heading on its own line. (Press Enter to separate a heading from the body text). If your heading is already written, make sure it is on its own line.
2. Put the pointer on the heading line.
3. Select the appropriate heading style from Styles, on your Home tab.

Begin every (major) section on a new page. Begin a subsection on a new page only if the previous page is full. Similarly, begin every appendix on a new page.

1.1.2 Paragraphs

The first line of the paragraph immediately following a section title is not indented. If it is, simply remove the indentation with the *backspace* key. Indent the paragraphs whose style is set as Normal in the Styles menu. Often, the body text is aligned to the left, as justified alignment may cause excessive space between words on a line. On the other hand, in many technical fields, the text is justified on both sides, but in such cases, activate automatic hyphenation to maintain reasonable separation between words. This template uses justified text with automatic hyphenation. The line spacing is set to 1.0 in the text.

Paragraphs should be at least two sentences long. If you find you have one-sentence paragraphs, rephrase or reformat your text, as they are discouraged in theses and theses appendices. You may also need to change your text if your paragraphs are too long.

Give all body text the same style. If you want to emphasise something, **bold** is preferable over *cursive*. This is because italicised text is said to be more difficult to read than boldfaced text. However, the field of technology tends to italicise some magnitude symbols. For example, italicised s can mean distance whereas nonitalicised s can mean second.

Do not use underlining for emphasis, as underlining is easily misinterpreted as a link. If you use different colours for emphasis, remember that people with colour blindness may have difficulty distinguishing between them. In particular, avoid using red and green at the same time. Also take into account that the screen readers used by people with vision impairment are not necessarily able to distinguish colours at all.

In English, a numeral and its associated unit are not separated by a space (e.g. 1Hz). In such cases, use a non-breaking space to ensure that the numeral and unit are on the same line. Finnish uses nonbreaking spaces instead of commas to group digits in thousands, and it uses commas rather than decimal points (e.g. '12 345,90'). Other languages have their own rules; if you are writing in English, check the conventions according to the relevant style guide.

1.2 Images, figures, tables and graphs

1.2.1 Images

An accessible document includes alternatives for images, e.g. including information about the image in the body text, in a caption or as alternative text ('alt text'). The point is for vision-impaired readers to receive the same information as readers who are able to see the images. Avoid the use of images that contain text within the image itself. It is recommended to put such text in the body text instead. If the information contained in the image is already in the body text, the alternative text for the image should say so. For example: 'A diagram of Celia's customer totals. The customer volumes are indicated in the body text.' For the alternative text, stick to the essentials without elaborating unnecessarily. The alternative text should be consistent with the rest of the document's text, i.e. don't use terms or words that are unfamiliar or haven't already been used in the text.

1.2.2 How to include alternative text for an image

In MS Word 2016 Office 365, alternative text can be added for an image (picture, figure, video, etc.) as follows:

1. Click on the image using the secondary mouse button.
2. Select 'Edit Alt Text'. The 'Alt Text' pane will appear.
3. Write a short description of the object's contents.

The procedure is a bit different in Word for Microsoft Office 2016 Standard:

1. Click on the image using the secondary mouse button.
2. Select: 'Format picture'.
3. In the panel that opens, choose the third icon, 'Layout & Properties'.
4. Select 'Alt Text' and write in Description your description of the object's contents. Do not write anything under Title. Screen readers do not read the title, only the Description where the object is.

If the object has a caption, do not repeat it in the alt text. Think instead about how the caption and the alt text may work in tandem, how the reader might read the two texts together. Sometimes the caption is enough by itself and no alt text is needed. For example, if an image just shows a person with nothing special about it and the caption shows only the person's name, the caption by itself is sufficient. Please note that screen readers read the alt text in the spot where the object is located. If a caption is below an image, the screen reader reads first the alt text and then the caption.

If you make a reference in the body text to an object like that below (Image 1), you must use Word's cross-reference function. Use 'Image' as the reference type when referring to such an object in the text. You can refer to several objects by saying 'in Image or Photo 1, 2 and 3...'. Note that the labels in table and image captions are typeset in a sans serif, or grotesque, font—Arial in this case (see Appendix A). This allows the screen reader to easily distinguish labels from body text.



Image 1. A coil terminating in two LEDs and a magnet at its centre.

1.2.3 Tables

Make tables in Word with the Insert/Table function. Don't use a image of a table, as the tools would not be able to interpret the image correctly. Make header rows for tables, and make sure the content of the cells can be read in a sensible order.

When you have created the table, mark the table's top row as a header row as follows:

1. Click in the top row of the table. This makes the table toolbar appear.

2. From the Layout tab on the toolbar, select Repeat Header Rows. If you wish, you can mark several rows as header rows.

Check that the cells in the table can be read in a reasonable order also by readers who use a screen reader. This is particularly important if the table has merged cells. Screen readers read table cells from left to right and from the top downwards.

- Put the pointer in the first cell and move from one cell to the next by pressing the Tab key.

Do not use tables for formatting regular text (body text). If you want to format your text in columns, for example, use the Columns function under the Layout tab. Also avoid using merged cells in a table. Tables should be kept simple: it is recommended to use additional rows rather than additional columns. It is also preferable to use two or more separate tables rather than complex single tables. Always provide alternative text for tables (for instructions on alt text, see Section 1.2.2). Check your tables manually for consistency and readability, then check them automatically using the 'Check Accessibility' feature, which is under the Review tab.

To refer to Table 1 below, you could use the Word function for cross-references (**References->Cross-references->Reference type: Table; Insert reference to: Only label and number**). The internet has more guidelines on this kind of cross-referencing (i.e. referring within a document to somewhere else in the same document). You may have to manually change the font in the body text and undo any bold used in the font style.

Table 1. A table example.

Campus	2020	2021	2022
Helsinki	5	6	3
Turku	2	5	7

1.2.4 Images, figures and tables in body text

Try to put references to images or tables on the same page as to the image or table itself. If that is impractical, try to put the image or table no further away than the next page. If you have many images, figures and tables, placing them close to their references may be impossible.

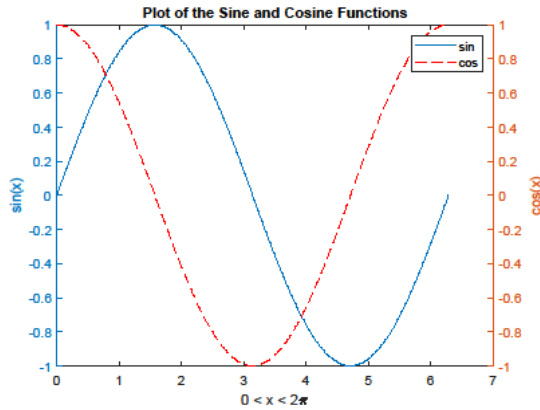


Figure 5: A MATLAB graph.

Avoid placing images, figures and tables where they are followed or preceded by only one or two lines of text, because otherwise readers might have difficulty finding the lines or they might miss them completely. If there is only a little text between two images, you might move the images to the top of the page and put the text below them. Alternatively, you could put the text on top and the images or figures below, or else put the text in the middle with one image on top and the other below. Base your choice on how easily the reader can follow your text (the content of the images also affects this) and whether the page as a whole looks neat and pleasing to the eye.

1.3 Mathematical equations

Mathematical equations are referenced using Arabic numerals, typically enclosed in parentheses, but not always. This template uses the parentheses style. For example:

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \quad 1$$

Refer to equations like Equation 1 in the same way as you would for figures, tables and sections. Remember punctuation after an equation, as equations in text are integral parts of sentences. Many scientific journals do not use punctuation marks after equations; then again, many do. In your thesis, do use punctuation marks with your equations. Equations in appendices are labelled with both letters combined with numbers. For example, the first numbered equation in Appendix A is labelled Equation A1, the first two are Equations A1–A2, and so on.

With charts or diagrams, it is important to think about how well their parts stand out and how their content might be conveyed other than by an image. To improve the readability of charts, you might add the data in table form. **(Design > Add chart element > Data table)**. Also consider how well the colours contrast from each another, especially if they are in grey tones. Different textures can also be used to fill the different areas of a

chart. You can also add alternative text to describe a chart. **Chart > Format > Accessibility > Alt Text**.

1.4 Give descriptive names to your links

If your text has links to a web page, check that the links are shown underlined. They should also be in a different colour than the body text. Blue is Word's default colour for links. Readers easily recognise blue underlined text as links. If you write a URL address in your document, Word usually puts the underlined blue font in automatically, so you don't have to edit the link yourself. Web addresses are often long and hard to read, especially when they have incomprehensible strings of characters. Change such links to human-readable text, for example: <http://www.celia.fi/> has more information on Celia's services and operations.

1. In Word Click on the link using the secondary mouse button.
2. Click 'Edit Hyperlink'.
3. Write a descriptive text for the link in the "Text to display" field.
4. Also make sure that the correct address is in the "Address" field.

Screen readers read the visible text of links and inform the reader that the text is a link. Please note, however, that if your thesis is meant to be printed, the link addresses will not be printed if only the plain text is visible. In that case, you should include the URL address along with the plain text. Long, cumbersome addresses may be added as footnotes so as not to disrupt the reader in the middle of the body text. You can leave uncomplicated addresses as they are within the body text.

For example: "The website of the Regional State Administrative Agency" (<https://www.webaccessibility.fi>) has guidelines on complying with accessibility requirements.

2 Putting the finishing touches on your document

When the content of your thesis is finished, finalise the document by setting its file properties. This is particularly important when you convert a Word file to PDF format and you want to ensure the accessibility of the PDF file. Write a title for a Word document by going to: File / Info / Properties / Advanced Properties / Summary / Title.

2.1 The final stage: check accessibility

Word has a feature for checking text accessibility. When your document is ready, select 'Check for Issues' from the Info option under the File tab. Select 'Check Accessibility'.

The newest versions of Word have 'Check Accessibility' function directly under the Review tab. A pane opens on the right side for inspecting

accessibility. The results of the inspection show possible errors and warnings. For more information about a result, click on the element's name. Word gives information on the reason why an element should be fixed as well as instructions on how to fix it. Correct all of the errors.

Please note: the accessibility inspection does not necessarily find all the errors nor does it inspect for quality! What it does do is check whether there is alternative text for images. It does not evaluate how good an alternative text is. Therefore, a human test of the text is also needed. This is because Word will not alert you if your text skips over a heading, for example. In a long text, the structure of your headings should be checked manually using the Navigation Pane.

When you save your thesis, name the file so that readers know what its content is about. Avoid giving it an abbreviated name that only persons within your organisation can readily understand. For instance, a document named 'Celia2020_01.docx' gives no relevant information to outsiders about the contents of the document. If you have made your thesis accessible and have run an accessibility inspection on it, you can then convert the thesis into an accessible PDF file.

A. Page layout and typographical design

Aalto University's visual guideline for writing documents

Aalto University's visual identity page has guidelines that apply to writing documents and the use of typefaces (<https://www.aalto.fi/en/visual-library#/visual-elements/typography>). The guideline states that body text be in the serif font Sentinel, and that section titles be in bold in the sans serif font Nimbus Sans. These fonts are supposed to be installed on all Aalto computers. However, being a commercial product, Sentinel can be replaced with Georgia and Nimbus Sans with Arial, both of which come preinstalled on all Windows computers. Thus, Georgia and Arial are the fonts used in this template.

Layout and typographical specifications

Page layout in the thesis

The thesis template has ready-made page-layout settings. There is no need to put in the settings yourself. However, just for informational purposes, the settings are as follows: For the online version of the document, the text column is centred, implying that the left and right margins are both 3.4 cm. If you want to print the document and bind it, the binding margin must be 4.8 cm. The text height is set to 23 cm by setting the top margin to 3.7 cm and the bottom margin to 3 cm. See Table A1 for a collection of the page layout settings.

Body text and section divisions

The body text uses the font Georgia (or Sentinel), size 12 pt, and section headings are boldfaced in Arial (or Nimbus Sans) font. Use at most three levels of hierarchy in your text: section, subsection and subsubsection. The size of the bold section font is 16 pt, with space of 20.2 pt before and 13.3 pt after the heading. For subsection headings, the font size is 14 pt, with space of 18.75 pt and 8.65 pt before and after, respectively. The subsubsection font size is 12 pt, and the space before and after the heading is the same as for the subsection. The subsection numbering must use the section number(s) above it. For example, Section 2.1.3 refers to Section 2, Subsection 1 and Subsubsection 3. The font and sizes for the three section hierarchies as well as the body text are given in Table A2.

Table A1: Page layout dimensions.

Paper size	A4
Text width	14.2 cm
Top margin	3.7 cm
Bottom margin	3.0 cm

Online document	
Left margin	3.4 cm
Right margin	3.4 cm
Printed document (for binding)	
Left margin	4.8 cm
Right margin	2.0 cm

Table A2: Fonts and font sizes to be used in the title, section headings and the body text.

Text	Font	Size (pt)
Title	Arial bold	18
Section	Arial bold	16
Subsection	Arial bold	14
Subsection	Arial bold	12
Body text	Georgia	12

The font size used for the text on the abstract page is 11 pt for the field labels as well as for the normal text.

Numbering equations

This section shows how equations in an appendix are numbered. See also section 1.3.

$$(x + a)^n = \sum_{k=0}^n \binom{n}{k} x^k a^{n-k}. \quad (\text{A } 1)$$

$$\sin \alpha \pm \sin \beta = 2 \sin \frac{1}{2}(\alpha \pm \beta) \cos \frac{1}{2}(\alpha \mp \beta). \quad (\text{A } 2)$$

B. Reference and in-text citation guidelines

Sources

Successful information searches provide a good foundation for thesis writing. Use academic/scientific sources and choose the best and most relevant to your topic from among them. Also check that the sources are reliable, especially if you use online sources. Information sources are used in academic writing (theses, essays, articles, research reports, etc.) to either support the claims made or to bring up views that you want to criticize. In either case, the quotation must say something relevant about the matter under discussion. Whenever a source is used, the body text must refer to it (in-text citation). Precise and correct references are part of a well-made publication. Precise references enable anyone to find without difficulty the information being discussed.

As a general rule, research uses sources in two different ways: **paraphrasing** and **borrowing**. The reader of the thesis should be clear at all times on when the author is expressing their own thought, when the author is paraphrasing and when quoting from another's text.

Paraphrasing

In many academic fields, paraphrasing is more prevalent than quoting directly. Paraphrasing means expressing another person's thought in your own words. This citation practice can allow for better integration of ideas, argumentation, and flow within the text. A good rule of thumb is for more than 80% of the paraphrase to be your own words. If you only change a few words from the original, you run the risk of plagiarism, even if you cite the source. Words matter. If you use the exact combination of words from another author, these must be in quotes.

Tips for paraphrasing

1. Identify the important points from the source text. Then, try to identify the relationships between the different parts. Are the relationships successive, causal, contrasting, or conditional? Can they be replaced by synonyms? For example, the contrastive conjunction **but** can sometimes be replaced by **however**, **nevertheless**, **although**, **still**, or **on the other hand**. Use of a synonym often may require that you change the structure of the sentence, which in turn may help you to formulate the ideas in your own words.
2. Synonyms: A word such as **give** can be replaced with **enable**, **offer**, **contribute** or **grant**. Refer to a thesaurus for more examples. You can find these online or at the Learning Centre. If you are unsure of how a new word might be used, check a dictionary or search the word in e.g. Google Scholar for examples of its use in context.

3. Common phrases - There are often multiple ways of expressing a given phrase in academic writing. For example, compare “Previous studies have not dealt with...” with “Researchers have not treated X in much detail” or “Most studies in the field of X have only focused on...”.
4. Additions and deletions - Can you add a missing item? Can you leave something out?
5. Change the structure of the sentence - There are many ways to change the structure. Can you change the sentence from passive voice to active voice, or vice versa? Can a subordinate clause be replaced by a non-finite clause? Or can it be replaced by a nominalised verb, or vice versa? Could the sentence be clarified by changing the word order? Could some nouns be replaced by verbs? Especially when paraphrasing foreign sources, you should keep in mind that prepositional structures are more prevalent in many languages than in Finnish, whereas Finnish expresses relationships often by way of grammatical case inflections. Finnish academic writing favours passive forms when referring to previous research, e.g. ‘In the research, it was noted...’. Use passive forms with care, however, so that the reader understands what is being referred to.

Direct quotes

Direct quotation means using the exact wording that was used in a source text. If you do this, you should place the quote in double quotation marks (“ ”) followed by the publication author, date (year) and page number in round brackets (the Harvard system), or the reference number in round brackets (the Vancouver system), or the reference number in square brackets (the IEEE system). Use lengthy direct quotations only if they are unavoidable. Lengthy direct quotations may be put in the block quote style, which are indented so that the length of the lines on the page is narrower than that of the body text. Do not use quotation marks in any of your block quotes. Block quotes often have less space between lines and/or a smaller font.

Direct quotations must follow the precise form of the original, even reproducing any typographical errors, etc. (you can indicate this by adding ‘(sic)’, meaning ‘thus’, immediately after the error). If you leave off part of a quotation, indicate the missing part with square brackets and an ellipsis: [...]. If you break off a quoted sentence before it ends, indicate this with an ellipsis in brackets and then put in the punctuation mark that ends the sentence, for example: ‘[...]’.

It should be noted that the frequency of direct quotations varies significantly between academic fields: it is common in arts, business, and design or architecture, but rare in science and engineering. Therefore, it is recommended that you ask your thesis advisor or check well-known journals to determine the frequency of direct quoting preferred by the experts in your field.

Example of a block quote (Harvard style)

Benkler (2006, p.60) defines commons-based peer production as ‘... a new modality of organising production: radically decentralised, collaborative, and nonproprietary; based on sharing resources and outputs among widely distributed, loosely connected individuals who cooperate with each other without relying on either market signals or managerial commands.’ Benkler claims that this radical new form of organising will continue to disrupt the ways that commercial firms function. Indeed, Benkler notes that the nature of the firm itself is radically transformed by this new modality of production:

As the companies that adopt this strategic reorientation become more integrated into the peer-production process itself, the boundary of the firm becomes more porous. Participation in the discussions and governance of open source development projects creates new ambiguity as to where, in relation to what is “inside” and “outside” of the firm boundary, the social process is. (2006, p.125)

The reference to this in the reference list:

Benkler, Y. (2006) *The wealth of networks: How social production transforms markets and freedom*. New Haven, CT: Yale University Press.

Citations: why, when and how?

By using citations (references), you give the credit due to others for their work. Sources show where your information came from and whether you used it correctly. By using references, readers can find the original publications and the same material you used in your thesis. Citing sources also shows your familiarity with the topic of your writing. Always cite the source whenever you use another person’s text. Failure to report your sources is plagiarism, i.e. copying other people’s ideas, results or words under your own name as though they were your own. Therefore, always distinguish for the reader what information is your own and what information was borrowed from others.

The two key considerations in adopting a particular style of citation are that you agree with your thesis advisor on the particular style at the start of your thesis writing process and that you remain consistent in the use of the style throughout your thesis. Your thesis advisor can provide recommendations for you on the common style guides generally used in your field. The libraries and the internet also have numerous guides to thesis writing.

Be consistent: be precise and accurate with your references, leaving none out. Do not simply copy references from different databases. Use instructions and manuals when you make your references.

A citation always has two parts: the **in-text citation** and the **reference**. In-text citation is the part that appears in the body text and refers to a separate section (named variously ‘Reference list’ or ‘Works cited’, etc.). The reference itself contains specific information about the source used in

the body text. The list of references ('Reference list', 'Works Cited', etc.) contains only references to the sources that were actually cited in the thesis.

Descriptions in the references (e.g. 'editor', 'online', 'in [the work]', 'pp. 24–27') are written in the language of the thesis, but the publisher's address is in the language that appears in the work cited (e.g. Köln, Deutschland) regardless of the language used in the thesis.

DOIs and online material

If a cited electronic article has digital object identifier (DOI), it is included in the reference list. With DOIs, it is unnecessary to mention the date the site was accessed. The DOIs of academic articles and theses are never supposed to change, and thus the access date is not important for such references. If the online material does not have a DOI, you should include the date the material was accessed online. Today, some online periodicals use article numbers instead of page numbers.

References in the reference list end with a full stop (period) unless the last item in the reference is an internet address or a DOI in internet address form. There are two ways of showing DOIs:

The internet address form, for example,

<https://doi.org/10.1103/PhysRevB.97.085104> and the short form, for example, 10.1103/PhysRevB.97.085104. You may use either form.

Citation styles

There are different ways to do referencing in academic texts. The most commonly used referencing systems are author–date, numbered-referencing (author–number), and footnote. Many disciplines have their own set ways of making references, and the different systems also have variations according to academic field. However, only one system should be used in any publication. Be systematic and consistent when making the in-text citations and references for your thesis.

Author–date system (Harvard, APA, MLA, etc.)

Harvard referencing is the most common author–date system. However, Harvard referencing has hundreds of variations, but whatever the variant, you should always show the author name(s), the year of publication and the page number(s) in the in-text citation. The reader can then see at a glance the author(s) and the age of the material. The reference list is sorted alphabetically.

Arts, humanities and social sciences often use APA (American Psychological Association), which is an author–date style. In APA, in-text citations include the author, year of publication, and page number(s) when directly quoting or when referring to a visual object, table, or some other detailed information. APA recommends adding page numbers also at other times as they help readers find the relevant locations in the source material.

Mark page numbers with p., or pp. for multiple pages, for example:

(Virtanen 2020, pp. 11–14). If the source lacks page numbers, indicate the section number, for example: (Korhonen 2021, Chapter 4).

Numbered referencing (Vancouver, IEEE)

Numbered referencing performs in-text citation by putting numbers in square brackets, round brackets (parentheses) or as superscripts. The numbering starts from one (1). In the reference list, the references are sorted in the order they appeared in the body text. For the reader, the reference information is not as readily available as in the Harvard system. For the author, the numbered referencing system is easy in that numbers are easy to insert and cause less disruption in the text structure. Numbered referencing may be well justified for theses that have source material without an author. However, compared to Harvard, Vancouver may be more time-consuming to update without reference management software.

The IEEE (Institute of Electrical and Electronics Engineers) referencing style differs from other numbered referencing styles in that, when referencing an author, it gives the author's first name or initial, and then the surname after that. This way of referencing is used particularly in electrical engineering. The IEEE Referencing Guide is obtainable here:

<https://ieeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf>

Footnote style

In the footnote style, the in-text citations are made by marking the body text with superscripted numbers. In most cases, the numbering is a normal consecutive series from the start to the end of the work. The number refers to a reference containing at least the name of the author, publication and the page number(s). The reference is at the bottom of the page (footnote) or at the end of the chapter (endnote). The footnotes are numbered like the citations in the text.

A benefit of this style is not only that the numbering causes little disruption to the flow of the body text, but that it allows extra information to be given besides the reference. The extra information might be the grounds for an assertion, basic differences between the sources used, explanations for abbreviations or labels used, etc. In general, the font size is smaller for footnotes than for body text, and the two are divided from each other by a horizontal line.

In the reference list, the sources are grouped by type – for example, interviews, archival sources, other sources and scientific literature may be grouped and alphabetised under their own headings. The year of publication comes after the publication information as in the Vancouver referencing style.

The footnote style of referencing is used particularly in the fields of literature and history. It is occasionally used in the arts, but considerably less often than Harvard or APA.

Reference list

Reference lists in Harvard style

Listed below are examples of references for different type of source materials: academic article, book, section of a books with editors, conference publication, thesis, law, patent, standard, web page and interview. Subheadings are used here only to help you find the examples for the different types of materials more easily. In an actual reference list, the references are usually put in alphabetical order without subheadings.

Article (with page number indicated):

Pendry, J. B. (2000). *Negative refraction makes a perfect lens*, Physical Review Letters, 85(18), pp. 3966-3969, <https://doi.org/10.1103/PhysRevLett.85.3966>

Article (with article number indicated):

Chen, J., Cheng, S., Xie, H., Wang, L. & Xiang, T. (2018). *Equivalence of restricted Boltzmann machines and tensor network states*, Physical Review B, 97(8), 085104, <https://doi.org/10.1103/PhysRevB.97.085104>

Book:

Bohren, C. F. & Huffman, D. R. (2004). *Absorption and Scattering of Light by Small Particles*, Weinheim, Germany: Wiley-VCH.

Chapter in a book with editors (compilation):

Yannopapas, V., Vanakaras, A. G. & Photinos, D. J. (2013). *Electrodynamic theory of three-dimensional metamaterials of hierarchically organized nanoparticles*. In: Rockstuhl, C. & Scharf, T. (eds.), *Amorphous Nanophotonics*, Berlin, Heidelberg, Germany: Springer, pp. 119–141.

Conference proceedings, published in a journal:

Joachims, T. (2002). *Optimizing search engines using clickthrough data*. Proceedings of the 8th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, Canada, pp. 133–142.

Master's thesis:

Martela, J. (2019). *Lifecycle of Mobile Phones*. Master's thesis. Aalto University. Available: <http://urn.fi/URN:NBN:fi:aalto-201908254898>

Doctoral thesis:

Garbacz, R. J. (1968). *A generalized expansion for radiated and scattered fields*. Doctoral thesis, Ohio State University, USA. Available: http://rave.ohioink.edu/etdc/view?acc_num=osu1302723653

Statute:

Copyright Act (404/1961). Finlex. [Accessed 15 November 2022]. Available: <https://www.finlex.fi/en/laki/kaannokset/1961/en19610404>

Patent:

Kassiou, M, Jorgensen, W, Munoz, L & The University of Sydney (2018), *Anti-cancer compounds*, 2018900315.

Standard:

SFS 5989. (2012). *Lähde- ja tekstiviitteitä koskevat ohjeet*. Finnish Standards Association SFS.

Web page:

Casselmann, B. (2018). *Jacob Bernoulli's zoo, AMS feature column*. [Accessed 1 March 2022]. Available: <http://www.ams.org/publicoutreach/feature-column/fc-2018-02>

Interview:

Nixon, R. (1977, May 4). *Interview by D. Frost* [video]. David Paradine Productions Ltd., Hertfordshire, U.K.

Reference lists in APA (7th ed.) style

Below are examples of how to refer to different types of sources in a reference list according to the **APA** (American Psychological Association) (**7th ed.**). Subheadings are used here only to help you find the examples for the different types of materials more easily. In an actual reference list, the references are usually put in alphabetical order without subheadings.

Examples

Article (with page number indicated):

Pendry, J. B. (2000). Negative refraction makes a perfect lens, *Physical Review Letters*, 85(18), pp. 3966–3969.
<https://doi.org/10.1103/PhysRevLett.85.3966>

Article (with article number indicated):

Chen, J., Cheng, S., Xie, H., Wang, L. & Xiang, T. (2018). Equivalence of restricted Boltzmann machines and tensor network states, *Physical Review B*, 97(8), article 085104. <https://doi.org/10.1103/PhysRevB.97.085104>

Printed journal article:

Kluger, J. (2010, November 1). Keeping young minds healthy. *Time*, 176(18), pp. 40–50.

E-book:

Jackson, L. M. (2019). *The psychology of prejudice: From attitudes to social action* (2nd. ed.). American Psychological Association.
<https://doi.org/10.1037/0000168-000>

Printed book:

Sapolsky, R. M. (2017). *Behave: The biology of humans at our best and worst*. Penguin Books.

Chapter in a book with editors (compilation):

Dillard, J. P. (2020). Currents in the study of persuasion. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media effects: Advances in theory and research* (4th ed.). pp. 115–129. Routledge.

Conference proceedings, published in a journal:

Joachims, T. (2002). Optimizing search engines using clickthrough data. *Proceedings of the 8th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, Canada, pp. 133–142.

Report:

Maurer, M., Dardess, P., Carman, K. L., Frazier, K., & Smeeding, L. (2012). *Guide to patient and family engagement: Environmental scan report* (Publication No. 12-0042-EF). American Institutes for Research, Agency for Healthcare Research and Quality. Retrieved May 2, 2022.
<https://www.ahrq.gov/research/findings/final-reports/ptfamilyscan/index.html>

Master's thesis:

Martela, J. (2019). *Lifecycle of Mobile Phones* [Master's thesis, Aalto University] <http://urn.fi/URN:NBN:fi:aalto-201908254898>

Doctoral thesis:

Garbacz, R. J. (1968). *A generalized expansion for radiated and scattered fields* [Doctoral thesis, Ohio State University, USA]. Retrieved May 2, 2022.
http://rave.ohioink.edu/etdc/view?acc_num=osu1302723653

Standard:

Finnish Standards Association SFS. (2012). *Lähde- ja tekstiviitteitä koskevat ohjeet*. (SFS standard No. 8989:2012).

Web page:

Casselmann, B. (2018). *Jacob Bernoulli's zoo, AMS feature column*. Retrieved March 1, 2022. <http://www.ams.org/publicoutreach/feature-column/fc-2018-02>

Interview:

Nixon, R. (1977, May 4). *Interview by D. Frost* [video]. David Paradine Productions Ltd., Hertfordshire, U.K.

Artwork in a museum:

van Gogh, V. (1889). *The starry night* [Painting]. The Museum of Modern Art, New York, NY, United States. Retrieved May 2, 2022.
https://www.moma.org/learn/moma_learning/vincent-van-gogh-the-starry-night-1889/

Art exhibition:

Design for eternity: Architectural models from the ancient Americas [Exhibition]. (2015–2016). The Met Fifth Avenue, New York, NY, United

States. Retrieved: May 2, 2022. <https://www.metmuseum.org/exhibitions/listings/2015/design-for-eternity>

Martinez, J.-L., & Douar, F. (2018–2019). *Archaeology goes graphic* [Exhibition]. The Louvre, Paris, France. Retrieved: May 2, 2022. <https://www.louvre.fr/en/expositions/archaeology-goes-graphic>

Film:

Fleming, V. (Director). (1939). *Gone with the wind* [Film]. Selznick International Pictures; Metro-Goldwyn-Mayer.

Film still:

Donen, S. (Director). (1963). *Charade* [Film]. USA: Universal Studios. Retrieved: May 2, 2022. [http://en.wikipedia.org/wiki/Charade_\(1963_film\)#Public_domain_status](http://en.wikipedia.org/wiki/Charade_(1963_film)#Public_domain_status)

TV series:

Serling, R. (Producer). (1959–1964). *The Twilight Zone* [TV series]. Cayuga Productions; CBS Productions.

TV series episode:

Favreau, J. (Writer), & Filoni, D. (Director). (2019, November 12) Chapter 1 (Season 1, Episode 1) [TV series episode]. In the TV series: J. Favreau, D. Filoni, K. Kennedy, & C. Wilson (Producers), *The Mandalorian*. Lucasfilm; Golem Creations.

Sherman-Palladino, A. (Screenwriter and Director). (2018, December 5). All alone (Season 2, Episode 10) [TV series episode]. In the TV series: A. Sherman-Palladino, D. Palladino, D. Gilbert, M. Shapiro, S. Carino, & S. Lawrence (Producers), *The Marvelous Mrs. Maisel*. Dorothy Parker Drank Here Productions; Picrow; Amazon Studios.

Music:

Picker, T., & McClatchy, J. D. (1995). *Emmeline: An opera in two acts* [partiture]. Schott Music.

Gilbert, W. S., & Sullivan, A. (2012). *The Mikado in full score* (C. Simpson & E. H. Jones, Eds.) [Full score]. Dover Publications. (Original work, published 1885)

Blog:

Morton, S. (2020, January 12). *A midlife crisis or a midlife unraveling?* PsychCentral. Retrieved: May 2, 2022. <https://psychcentral.com/blog/a-midlife-crisis-or-a-midlife-unraveling>

Facebook page:

Community of Multiculturalism. (n.d.). *Home* [Facebook page]. Facebook. Retrieved: Oct 14, 2021. <https://www.facebook.com/communityofmulticulturalism/>

Reference lists in Vancouver style

The Vancouver referencing uses a numerical style. The references are numbered in the order they appear in the body text. Journal names are abbreviated. The Woodward Library of the University of British Columbia has a searchable list of journal abbreviations: <https://woodward.library.ubc.ca/woodward/research-help/journal-abbreviations/>

Below are listed examples of references for different type of source materials: academic article (1, 2), book (3), section of book with editor (4), conference publication (5), thesis (6, 7), law (8), patent (9), standard (10), web page (11), interview (12). Specify the accessed date in the case of references that may change, such as online references. Electronic articles and theses that have a digital object identifier (DOI) should not change, and therefore the date of access is not important for such references. Please also be aware that some journals use article numbers (2) instead of page numbers (1).

1. Pendry JB. Negative refraction makes a perfect lens, *Phys Rev Lett*. 2000 Oct;85(18):3966-3969. Available: <https://doi.org/10.1103/PhysRevLett.85.3966>
2. Chen J, Cheng S, Xie H, Wang L, Xiang T. Equivalence of restricted Boltzmann machines and tensor network states, *Phys Rev B*, 2008;97(8):085104. Available: <https://doi.org/10.1103/PhysRevB.97.085104>
3. Bohren CF, Huffman DR. *Absorption and Scattering of Light by Small Particles*, Weinheim, Germany: Wiley-VCH; 2008.
4. Yannopoulos V, Vanakaras AG, Photinos DJ. Electrodynamics theory of three-dimensional metamaterials of hierarchically organized nanoparticles. In: Rockstuhl, C, Scharf, T. (ed.), *Amorphous Nanophotonics*. Berlin, Germany: Springer, 2013, pp. 119–141.
5. Joachims T. Optimizing search engines using clickthrough data. *Proceedings of the 8th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, Edmonton, Canada, Jul. 23–26 2002. pp. 133–142.
6. Martela J. *Lifecycle of Mobile Phones*. Master's thesis. Aalto University 2019. Available: <http://urn.fi/URN:NBN:fi:aalto-201908254898>
7. Garbacz RJ. *A generalized expansion for radiated and scattered fields*. Doctoral thesis, Ohio State University, USA. 1968. Available: http://rave.ohioink.edu/etdc/view?acc_num=osu1302723653
8. Tekijänöikeuslaki. Finlex. [Viewed 15 November 2022]. (8.7.1961)/404. Available: <https://www.finlex.fi/en/laki/kaannokset/1961/en19610404>
9. Kassiou M, Jorgensen W, Munoz L. The University of Sydney, Anti-can-

cer compounds, 2018. 2018900315.

10. SFS 5989. Lähde- ja tekstiviitteitä koskevat ohjeet. Finnish Standards Association SFS. 2012.
11. Casselman B. Jacob Bernoulli's zoo, AMS feature column. [Accessed 1 March 2022]. 2018. Available: <http://www.ams.org/publicoutreach/feature-column/fc-2018-02>
12. Nixon R. Interview by D. Frost [video]. David Paradine Productions Ltd., Hertfordshire, U.K. 4 May 1977.

Reference lists in IEEE style

The IEEE (Institute of Electrical and Electronics Engineers) referencing style differs from other Vancouver author-number styles in that it presents the author's given name or initial first and then the surname. Book names and article titles are put in quotation marks (" "). Journal names are condensed and put in italics. This referencing style is used particularly in electronical engineering. For the original IEEE reference guide in English, see reference 10 in the reference list below.

The reference list below contains examples of: articles [1, 2], a book [3], a chapter in a book with editors [4], a conference publication [5], a master's thesis [6], a doctoral thesis [7], a standard [8] and a webpage [9]. Note that the IEEE style allows DOIs, but does not require them. For online references, you should specify the 'accessed' date if it is a webpage that might change. Academic articles and theses are never supposed to change, and thus the access date is not important for such references. Today, some periodicals use article numbers [2] instead of ordinary page numbers [1]. See item 10 in the reference list below for more details. References to interviews or artwork using the IEEE style seems rare, and the guide [10] does not mention such references at all.

- [1] J. B. Pendry, "Negative refraction makes a perfect lens," *Phys. Rev. Lett.*, vol. 85, no. 18, pp. 3966–3969, Oct. 2000, doi: 10.1103/PhysRevLett.85.3966.
- [2] J. Chen, S. Cheng, H. Xie, L. Wang, and T. Xiang, "Equivalence of restricted Boltzmann machines and tensor network states," *Phys. Rev. B*, vol. 97, no. 8, 2018, Art. no. 085104, doi: 10.1103/PhysRevB.97.085104.
- [3] C. F. Bohren and D. R. Huffman, *Absorption and Scattering of Light by Small Particles*, Weinheim, Germany: Wiley-VCH, 2004.
- [4] V. Yannopapas, A. G. Vanakaras, and D. J. Photinos, "Electrodynamic theory of three-dimensional metamaterials of hierarchically organized nanoparticles," in: *Amorphous Nanophotonics*, C.

- Rockstuhl ja T. Scharf, (eds.), Berlin Heidelberg, Germany: Springer, 2013, pp. 119–141.
- [5] T. Joachims, “Optimizing search engines using clickthrough data,” in: *Proc. 8th ACM SIGKDD Int. Conf. Knowledge Discovery and Data Mining*, Edmonton, Canada, Jul. 23–26, 2002, pp. 133–142.
 - [6] J. Martela, “Lifecycle of Mobile Phones,” Master’s thesis, Dept. Materials Science and Engineering, Aalto University, Espoo, Finland, 2019. <http://urn.fi/URN:NBN:fi:aalto-201908254898>
 - [7] R.J. Garbacz, “A generalized expansion for radiated and scattered fields,” Dissertation, ElectroScience Lab., Ohio State Univ., USA, 1968. Available: http://rave.ohiolink.edu/etdc/view?acc_num=osu1302723653
 - [8] Simple Mail Transfer Protocol, RFC 5321, J. Klensin, Oct. 2008, Accessed: March 1, 2022. Available: <https://tools.ietf.org/html/rfc5321>
 - [9] B. Casselman, “Jacob Bernoulli's zoo,” AMS feature column. Accessed: March 1, 2022. Available: <http://www.ams.org/publicoutreach/feature-column/fc-2018-02>
 - [10] IEEE, “IEEE Reference Guide,” 2018. Accessed: March 1, 2022. Available: <https://ieeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf>

Citation guides and articles (listed in Harvard style)

American Medical Association. (2007). *AMA Manual of Style: A Guide for Authors and Editors* (10th ed.). New York, USA: Oxford University Press.

American Psychological Association. (2010). *Publication Manual of the American Psychological Association*. Washington, USA: American Psychological Association.

American Sociological Association. (2014). *American Sociological Association Style Guide* (5th ed.). Washington, USA: American Sociological Association.

Chernin, E. (1988). The “Harvard System”: a mystery dispelled, *BMJ: British Medical Journal*, 297(6655), <https://doi.org/10.1136/bmj.297.6655.1062>

Council of Science Editors. (2012). *Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers*. Chicago, USA: University of Chicago Press.

Forget, M. & Paloposki, T. (2019). When academic writing cultures collide: Plagiarism requirements in the English Thesis Seminar at Aalto University.

Seminar presentation: 3rd International Seminar English as a Medium of Instruction (EMI): embracing pluricultural education, Valencia, Spain.

ISO 690. (2010). Information and documentation – Guidelines for bibliographic references and citations to information resources (3rd ed.). International Organization for Standardization. Available: <https://www.iso.org/standard/43320.html>

Modern Language Association of America. (2021). MLA Handbook. MLA handbook for writers of research papers (9th ed.). New York, USA: Modern Language Association of America.

Oxford University Press. (2016). New Oxford Style Manual. Oxford, UK: Oxford University Press.

Patrias, K. (2007). Citing medicine: the NLM style guide for authors, editors, and publishers (2nd ed.). Bethesda, USA: National Library of Medicine (US). [accessed 1 March 2022]. Available: <http://www.nlm.nih.gov/citing-medicine>

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Sutherland-Smith, W. (2019). Is student plagiarism still a serious problem in universities today? In: Pecorari, D. & Shaw, P. (ed.). Student Plagiarism in Higher Education. Oxford, UK: Routledge. pp. 47-61.

University of Chicago Press. (2020). Chicago Manual of Style. Chicago, USA: University of Chicago Press. [Accessed 17 May 2022]. Available: <https://login.chicagomanualofstyle.org/action/login?token=eb815017-502c-463a-b899-d54c1fa728fb>

University of Manchester. (2018). Academic Phrasebank [web page]. [Accessed 17 May 2022]. Available: <http://www.phrasebank.manchester.ac.uk/>