

CT1112 Lecture 7: Technical Writing

- Writing Skills:
 - > Types of Writing:
 - > Scientific
 - > Technical
 - Research & Referencing
 - > Technical Report Writing

Types of Writing



Types of Writing categorized by audience / purpose:

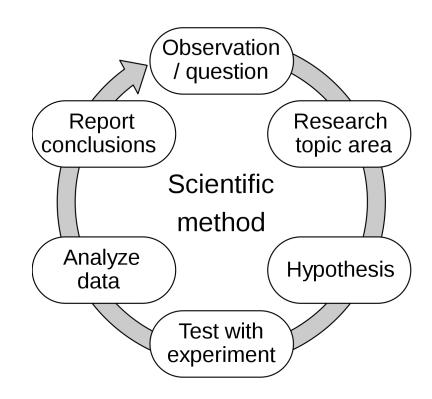
- Academic Writing: formal, organized, research, referenced (investigation)
- Scientific Writing: objective, technical, communication among scientists
- ➤ **Technical** Writing: communicating about technical topics; instructing on technical product use; via technical media
- ➤ Business Writing: task instructions; recording business information, reports; persuasive: sales, proposals, press releases; transactional: emails, letters, memos
- Creative Writing: original thoughts of the writer

Scientific Writing

What? Origins in 14th century; first scientific journal 1665

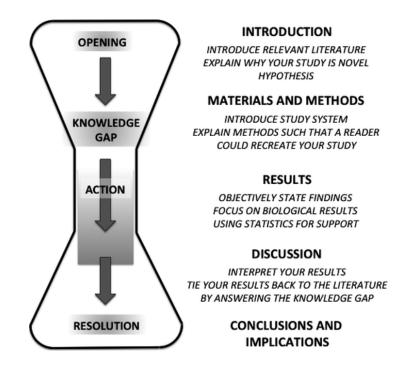
(Harmon & Gross. 2007 "On Early English Scientific Writing")

- > Why? Objective communication among scientists
- ➤ How? Stages of scientific method: Introduction to problem; Hypothesis; Methods to investigate problem; Results Description & Analysis and Conclusions
- Purpose: communicating your work goals, hypothesis and contribution - effectively to an audience who could recreate your study

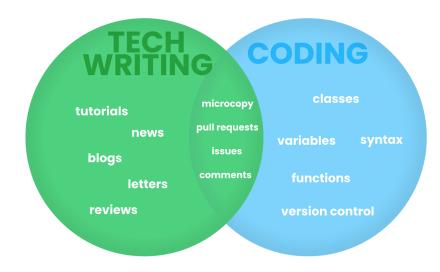


Scientific Writing

- ➤ Introduction: Relevance, novelty, purpose and relevant literature
- ➤ **Methods**: Explain methods and study approach so that study can be recreated
- Results: Objective report of findings
- ➤ **Discussion**: Interpretation of results, tie results back to literature, address original goal
- Conclusion: Discuss overall work implications



https://esajournals.onlinelibrary.wiley.com/



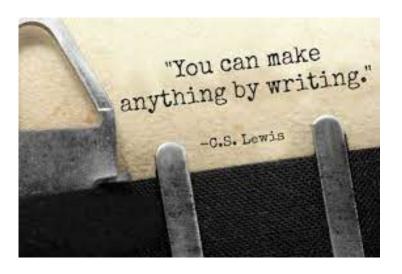
https://css-tricks.com/technical-writing-for-developers/

Technical Writing

- Subset of Scientific Writing: clear, concise, informative
- > Technical documentation in engineering, computer science and media
- Writing, editing, proofreading complex technical text
- Creating and editing technical diagrams, models
- Collating and verifying information: requirements, designs, tests
- Producing support documentation

Writing Process

- 1. Pre-writing
- 2. Research
- 3. Writing
- 4. Editing



Research

"The systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions"

Oxford Dictionary

- > Sources:
 - ➤ University of Galway library
 - ➤ Google Scholar
 - ➤ Online Databases (e.g. Scopus)
 - ➤ Wikipedia references



Research

- Search terms; refining your search based on pre-writing
- > Scanning: be purposeful
 - ➤ Quality: source, audience, bias
 - ➤ Content: abstract, conclusion
- Once sourced, download your own copy
- Annotate: concentrated, directed, active reading: time & place; key ideas?
- Referencing / Citations



Research: Cornell System

Cornell System: Walter Pauk, Cornell

> Record: record facts on right

Reduce: make reduced notes in left hand column

> Recite: cover rhs, recite facts and ideas out loud

- Reflect: why are these ideas important? How are they connected?
- > Review: repeat the "Recite" stage several times
- Recapitulate: write a summary at the bottom in your own words



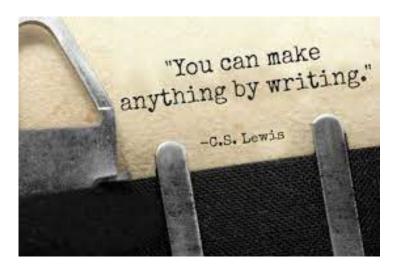
Referencing

- Standard way to acknowledge all sources used in your work
- > Same basic bibliographic information about a source
 - **1.Journal articles:** author(s), publication year, article title, journal title, volume, issue, page number(s), Digital Object Identifier (DOI) or URL
 - **2.Book:** author(s)/editor(s), publication year, book title, place of publication, publisher
 - **3.Web page:** author(s)/editor(s)/name of organisation, date page was last updated, title of page, date page was accessed, URL
- Correct referencing is essential to academic integrity and to avoid plagiarism: requirement for all student work



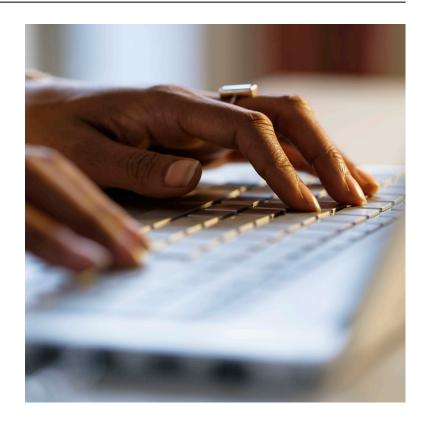
Writing Process

- 1. Pre-writing
- 2. Research
- 3. Writing
- 4. Editing



Technical Writing: Reports

- Structure: Title; Introduction; Body: Procedure, Findings; Conclusion. References, Appendices
- Format:
 - 1. MAIN HEADING
 - 1.1 Lesser Heading
 - 1.1.1 Small heading
- Writing:
 - Clear, Concise, Straightforward
- Diagrams: Tables, graphs, drawings, photographs
 - Required information? Easy to use? Attractive?



Report Writing: Structure

- ➤ Logical, coherent structure: compose and construct your argument in a cohesive manner
- Outlining: move from general to specific
- > Planning: structure, length and argument
 - ➤ Structure: 3 parts: Introduction Body Conclusion
 - ➤ Length: 150 words for Introduction & Conclusion; 700 words for Body
 - Argument

> Introduction:

- ➤ Understanding of title and purpose
- > Objectives: what you are going to do
- > Outline of what you are going to deal with
- Outline of your argument

Main Body:

- Work through key points, supported with evidence
- Scientific Method: Method, Results, Discussion

Conclusion:

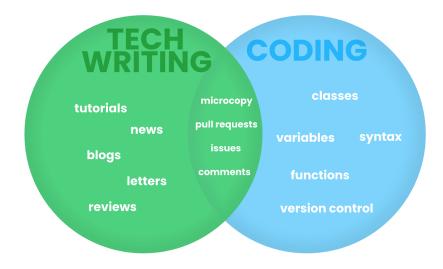
- Provides a sense of completion: what you have done
- Sum up your argument; establish a position or next steps

Report Writing: Example

have no facility to supply 12000 amps required for the new plant from the existing spare O.C.B.'s, this will require the removal of some of the old existing oil circuit breakers and replacing with new vacuum circuit breakers (VCBs) since we cannot uprate the existing VWX equipment which is of course 1937 vintage, the proposal for this would be as follows.

How to improve?

Theiet.org A Guide to Technical Report Writing



https://css-tricks.com/technical-writing-for-developers/

Good Report Writing:

- Produce the report for your reader(s)
- 2. Keep the report as short as possible
- 3. Organise information for reader's convenience
- Include accurate references.
- 5. Ensure your writing is accurate, concise and straightforward
- 6. Include diagrams with the right labels in the right place
- 7. Make sure your summary gives the whole picture in brief
- 8. Check the report for technical errors, typing errors and inconsistency
- 9. Consider design as well as content
- **10.** Produce the report for your reader(s)

Assignment 2: Technical Report

- Computer Science Communication Tools
 - Technical report / paper
 - Purpose: to see how well you understand and can apply key CT1112 concepts in your subject (Computer Science, AI)
 - Length:
 - Guideline: approx. 2 pages / 1000 words of content (excluding references, title page)
 - Technical References: 2-4
- Due: Thursday 23/11/2023





CT1112 Lecture 7 Review

Lecture 7:

- > Technical Writing Skills:
 - ➤ Scientific Writing
 - ➤ Technical Writing

Lecture 8:

- Referencing & Mendeley
- Academic Writing