

* Seven C's of Communication

- ① Clear
- ② Concise
- ③ Concrete
- ④ Correct
- ⑤ Coherent - Similar to concise & concrete
- What we are writing or talking is always on central theme
- (to that one point/topic)
- ⑥ Complete
- ⑦ Courteous

* Various types of Communication

- Written
- Oral
- Visual
- Body Gestures
- Electronic Mediums

Each of the type above can be divided in two classes

① One to one

② One to Many

→ Written Communication

→ Technical : Language, Theorems and proofs,
Examples, Equations, Figures, Tables,
References

→ Creative : Language, Images, sound pattern

→ Oral Communication

Technical → Visual Aids: charts, slides

Non-Technical → Podium

→ Technical Communication:

Technical writing: Thesis, Paper, Report, Memo, Proposal

Technical Presentation: Progress Report, Viva, Project review, Seminar, Lecture

* General Rules:

Fact 1: Technical communication is an ART.

Fact 2: Supervised Practice makes you BETTER

Fact 3: Writing and presentation is for other persons.
not for yourself.

Fact 4: Technical writing or presentation is for some GAI

Gain = M.Tech, PhD, Job, Project
Money

Promotion, Fame,

Recognition, Award, etc.

Fact 5: Know / Understand the subject thoroughly before writing / presentation

Fact 6: No cheating

Fact 7: Speak the truth, say nice things, do not speak the truth that is not nice.

Journal Papers

- More Prestige & Important, Publish in a Journal
- Archived or future

→ What is Journal

- Regularly published
- Soft bound collection of articles/papers
- Devoted to one subject area
- High quality professional Articles
- Each journal = own style
- A team of Editors - well known professionals

→ Papers

→ Printed

- Journals

- Magazines

- conference proceedings

→ Presented

- Conferences - abstracts/summary in proceedings

→ Internet

- PDF or HTML files in online journals or blogs

====> What is Journal?

- Each Article is reviewed by 2-5 reviews

- Reviewers = well known professionals selected by editors

- Articles = Letters (1-3 pages), Reviews (Invited and many pages), Invited or contributed Articles (8-10 pages)

- Identified by a volume no., issue no., page no., year

- Archived in libraries acc. to volume no. or year

How to publish

Easy process

Journal

- Hard Review
- More Professional
- Page Nos initially start with 1 and goes on with issue (Not necessarily all starts with 1)

(If monthly issue - then go from previous month Page No.)

v.

Magazines

- Easy Review
- Not that much professional
- Always starts with one

Categories of Journals

- Professional society - IEEE, ACM, ...
Most prestigious
- Top international Publishers - Elsevier, Springer
Prestigious
- Unknown or Little-known publishers and universities
Junk

Payment for Journals

- Unpaid if the final paper is less than N pages
- Prestigious
- Paid
 - Not much prestige
 - Quicker
 - Online PDF based

choose

- Journals published by well-known professional societies or publishers (IEEE, IET, ACM, APMIS, SIAM)
- Journals with high reputation
- Journals which we read and cite from
- Journals published regularly

* Which journal?

Avoid

- Journals started last month
- Journals from unknown publishers
- Journals published in countries w/o well-known scholars
- Journals w/o reviews
- Journals that do not show the results of review
- Journals that ask for money after acceptance
(Most journals asks for fee if the paper after revision is longer than 8-10 printed pages)

* Submitting to a Journal

- Prepare the manuscript according to journal's Instruction and style.
- Submit a cover letter and your manuscript.

* Journal publication process

- Save the email from the Journal office with a manuscript number
- Wait 2-8 months
- Editor sends an email
 - Acceptance
 - Rejection
 - Request for revising with a set of comments from Reviewers

* Revising

- control your ego
- Read comments carefully
- Make corrections and change acc. to review comments.
- send back the revised manuscript and a polite letter where you write a response to each comment of every reviewer.

* After Acceptance

- A submission of the final revised version with large and high quality diagrams and photos
- pay page-charges if too large a paper
- wait
- Final corrections on the Cetlley proof of the paper (within 24 hours)
- wait
- Paper Published

* Citing Credit

- Everybody who contributed = Coauthor
- Everybody who helped indirectly = Mentioned in an Acknowledgement section
- Every paper/document consulted = Item in References

* Reference and citation

- (1) A master list of PDF files of papers in Zoteo (Mendeley or JeebRof)
- (2) Extract BibTeX database from Mendeley, Zoteo or JeebRof
- (3) Edit (add to) manually
- (4) A MASTER LIST in Zoteo or Mendeley or JeebRof (or BibTeX or Endnote)
- (5) Insert citation in the proper style in manuscript from MASTER LIST

- * Rules of Punctuation
- Full stop
 - At the end of sentence.
 - After title - Mr., Mrs.,
 - AM, PM
 - a.m., p.m.
- Comma
- Colon
- Semi-colon
- Hyphen

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Tenses

- present simple
- Past continuous
- Future perfect
- Perfect cont.

Journal Paper Structure

Title, Authors, Address, Abstract, Keywords, Introduction

- Authors with Address
- Abstract
- Keywords for Indexing
- Introduction
- Body - Theory, Your Methods, Results
- Conclusion
- Acknowledgement
- Appendix with long derivations
- References
- List of Figure captions
- List of Table captions
- Author's photo and bio

2/g - Speaking and Listening Skill

Healthy Body ← Balanced Diet

Healthy Mind ← Balanced Reading

→ Books, Magazines, Journals, Newspapers,
- classics and scriptures

- Fiction, Non-Fiction,

- Technical, Non-Technical,

→ Read as much as possible

→ Read Good Books, magazines,

Good Books → Good knowledge → Power

- No Reading → Weak Mind → No Deep Thinking →
No Innovative Ideas → No Research or Poor Quality
Research

- No reading → No Research or Poor Quality Research
- No or Poor Publications & Research

- Read with a Notebook and a Pencil
(Electronic → X-rayed +, -)

- Read slowly and consult a Good Dictionary
(Eng - Eng. or Eng - Mother tongue)

- Use underlining or Write Notes in the Margin.
- Derive the eqⁿ (2) (3), - - to verify the theory.
- Simulate the experiments to verify the results
the Books or Papers.

→ Read English Books, Journals, Newspapers, Magazines
- Style

- Paragraph structure } focus on
- Sentence structure }
- Words }

- Read & Think & Understand

- Write a Summary on what you understand (Interro)

Write a summary on what you understood
(Zotero) Date: 11/11/2023

OG/OG

Listening

- Important part of oral communication
- Listen with full attention
- Take Notes

Meetings with supervisor, Boss

Seminars, Group Meetings, Classes

- Listen to remember
- Listen and then act
- Maintain Eye contact - same horizontal level
- Use Appropriate Gestures
- Ask few pertinent questions and make simple comments
- Be Non Judgmental
- Remain Calm
- Do not provoke nor argue with speaker
- Do not try to show off yourself
- Do not take any hasty decision while listening.

Effective Listening

- It is an ART.
- Practice carefully
- People appreciate a patient listener.

* Writing in Latex

- Macro for typesetting markup lang. Tex
- Tex is the best type setting lang. for scientific
(msoff, xml / HTML, doctbook)
- Install a free Tex engine (MikTex, MacTeX, Texlive)
Also overleaf - online and commercial packages
- Use an ASCII text editor (Notepad, Vim, Emacs, Textworks, ...)
- Create an ASCII text file "foo.tex".
- Compile and execute the text file "pdflatex foo.tex".
- output = foo.pdf
- Firstline = \documentclass [11pt] {scrartcl}
- Then a series of packaged modules are called.
{usepackage {amsmath}, usepackage {hyperref}}
- \title {\text{doc.title}}
- \author {\text{your name} \& IIT JEE, crouching cat}
- \begin{document} \maketitle \text{your text etc.} \end{document}

→ Advantage of Latex

- Made by for Technical documents with eqⁿ, tables, Figures, References
- Free packs available
- Default type setting for most top journals and universities
- Very high quality
- Automatic numbering of eqⁿ, figures, tables and references, footnotes, sections, pages
- Cross-referencing is easy
- Extremely flexible and powerful.

- Presentation vs. Writing
 - Immediate
 - Real Time
 - Face to Face
 - Long Term
 - Archival
 - Non contact
- A presentation = Lecture +
 - Graphics / Hand-outs / Audio-Visual Aids
 - Efforts to secure a predetermined response
 - (ex : Thesis presentation - wants approval (Validation))

→ Why Presentations || what to present

- To announce your invention / research work
- To propose and get money for a new technique / system / project / idea
- To educate others on your subject / research contribution / views
- To sell / advertise your products / ideas
- To get a new job / promotion
- To reach out

→ Presentation to Support

- conference Paper
- Proposals for new research or projects
- Invention disclosure
- Thesis

→ Guidelines:

① → know your Audience : professors, supervisors/managers, customers, co-workers, conference attendees

② → Words uttered once, cannot be taken back.

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→ Technical Presentations

- Inshort → Project Proposals, Research Papers, Ideas
- Why → To out-reach, examination, advertisement, sell
- Guidelines, Tips
- Audio-Visuals

* Various types of Technical Presentation

- Examinations
- Project Review / Performance Review
- Getting a new project / grant
- Publicity / Ad / selling
- Teaching
- Out-Reaching

* Guidelines contd.

(3) (Supervised) practice makes perfect

- Make a Video / Screen Recording and Watch it many times with Friends and Family

(4) Take time to prepare your slides

$$\# \text{ of slides} = \# \text{ of minutes allowed}$$

(5) Do not irritate your Audience

(6) Have a thorough and deep understanding of your subject

(7) Do not talk about what you do not know or what you have not done

- (8) Technical Presentation
- = Show Business
 - Make it interesting
 - Be familiar with the room and AV set-up
 - Look at your audience
 - Use your hands or forget them
 - Use voice control
 - Avoid vocal and gesture mannerisms
 - Be Relaxed, Be sincere
 - observe time limit
 - Dress Nicely and Decently
 - Time manage topics in your talk
 - Jokes / anecdotes / humor
 - only if it comes naturally and is not offensive

(9) Be Enthusiastic, Show Enthusiasm

- (10) If you are the speaker, You are in command.
- (11) Be polite and Tactful

* A presentation

- Descriptive Title
- Introduction : Tell them what are you going to tell them
- Discussion - Tell them
- Conclusion - Tell them what you told them

* Focus of your Presentation for Thesis / Paper

- Your Problem
- Your Work (Don't be so modest / Mention Everything)
- Your Contribution / Innovations
- Advantages from your work

→ Audio-Visual Aids

- Keep it simple
- "Less is More" - audience attention span is short
- 1 picture = 1000 words
- 1 minute / slide
- Equations / Maths - Be careful
(Write use of every symbol)
- Slide = Cue-card
- Lettering large enough (write readable texts - large enough)
- Lines thick enough
- Use colors / animation / Multimedia whenever possible
[Just put a picture, and explain it.]
Do not put explanation text on slides]

→ Summary

- What
- Why
- Guidelines, Tips
- Audio-Visuals

* Thesis Writing and Defense

- M.Tech and PhD
- What is research
- Thesis structure
- Thesis defense

* M.Tech and PhD Degrees

- Research based degrees.
- objective = Learning + Research contribution + Documentation = Thesis

* What is Research

- Adding to the existing body of knowledge of a topic or a domain.
- Developing a new/original technique, observation, algorithm, theory, ...
- Continuing an original work done by others, esp. the supervisor.
- Providing an original technique, - in an "unoriginal" but competent piece of work.
- Developing several small original ideas, methods, and algorithms, . . .
- Showing originality in testing somebody else's ideas.
- Finding a counter-example or fallacy in somebody else's ideas

* Doing Research

- select a supervisor (Active and Experienced)
- select an area
- Select a problem

- For $i=1$ to n

1. Read between lines, Discuss, Understand
2. Develop Testcases
3. Analyse, Design, Simulate, Experiment
4. next i

→ Write papers, Submit progress reports. Go to Conference

II- Thesis

- Final Document
- Record of your Achievements
- Reviewed by the supervisor and Experts
- Archived in the University library / shodhganga Repository

I.M.R.D Main Body (ILMR.D)

1. Introduction
2. Literature Survey
3. Method
4. Results
5. Discussion of Results

→ Introduction & chapter 1 — spend atleast 6 months
for preparation
Main Theme = WHY

1. Broad area of your problem (2-3 para.)
2. Your problem (2 para.)
3. Current state of this problem in global scenario (2 para)
4. Approach taken (1 para.)
5. Highlight of Results (2 para.)
6. Your contributions (1 para.)
7. Origin organization of this thesis (1 para.)

Remember: Introduction should have structure of a
statement from a broader perspective of
your problem.

→ Literature Survey: Chapter 2
Main Theme = WHO
- Discuss works of others working in areas similar to your
problem.
- Chronological or Important first.

→ Methods: Chapter 3

- Main Theme = HOW
- Basic Theory
- Your Approach in solving
- your analysis, derivations, theorems, proofs..
- Your case-study, Your choice of data, Your Programs, simulations...
- your experiments: Lab or Numerical

You need for good research

- Solid Analysis
- Analysis + Simulation based on good data
- Analysis + Lab Experiments.

→ Results: Chapter N-3.

Discussion: Chapter N-2

Main Theme = So WHAT

- Interpret your results not paraphrase
- Do not extrapolate
- Use numbers not adjectives
- follow standards

→ Chapter N-1 = Future works (a few paragraphs)

→ Chapter N = Conclusion or summary (a few paragraphs)

C D

Page No.
Date

10/10/2022

- * Difference between Section and chapter
 - chapter consists various sections.

* Front Matter

- cover page from the University (*)
- Page with certification and signature (*)
- Title page (*)
- Dedication
- Acknowledgement and Thanks
- Abstract (500 words) (*)
- Table of contents (*)
- List of Figures (*)
- List of Tables (*)
- List of Acronyms used

(*) - Mandatory

* Back-Matter

- List of References
- Appendix

* Thesis Submission

- Follow the guidelines of the Department and University
- Get plagiarism checked

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- Document your achievements

- After Thesis Submission
 - Thesis is sent to reviewers selected by committee
 - Wait for reviews
 - Loop for revisions and submissions

* Thesis Defense

- Presentation + oral
- Follow the guidelines
- Dress properly
- Have a back-up pen-drive, CD-rom, laptop in case things fail in the exam room
- Sleep for 8 hours in the previous night and be calm and show enthusiasm in the presentation
- Do not give up on qn you do not know - try to derive the answer.

* Expectation of Examiners in Thesis Defence

- Maintain Time
- A good understanding of the main subject
- A good understanding of the problem and related areas
- Aware of the literature, esp. the recent papers
- Understanding of the result obtained
- Aware of contribution