BT 0084
Technical Communication (Practical)

Contents

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SUBJECT INTRODUCTION

'Technical Communication – Practical' (BT 0084) is a two credit subject of fourth semester in B.Sc. IT program, and it is a complimentary subject to the 'Technical Communication – Theory' (BT 0071)

Technical Communication has existed as long as there have been scribes. Technical writing is the skill, which brings expertise to the common man's home, making it possible for everyone to use anything from a universal remote to a super-complicated machine, safely and smartly. In the 21st century where man walks with his machine, a technical writer is much sought after and with skill and expertise can walk up the career ladder really fast.

In this particular practical subject, special care has been taken to include exercises to sharpen your skills in technical communication. There are 16 exercises, which expose you to different areas in technical writing like datasheets, brochure writing, scientific analysis, abstract writing, and project reporting, technical manual writing among others.

General Objectives of studying the subject
After completing various exercises of this practical subject, you should be in a position to:

- demonstrate skills and knowledge necessary to succeed as a technical communicator.
- identify and utilize skills involved in technical communication.
- write and demonstrate expertise in various areas of technical writing including datasheets, brochure, and abstracts among others.
- demonstrate time management, and observational skills.
- judge the types and needs of audience in effective technical communication

The subject demands understanding of basics of English grammar and a flair for writing.

Exercise 1   Technical Writer

Objective: The idea behind this exercise is to understand what technical communication is all about. A technical writer is someone who understands a subject thoroughly and is able to communicate it to the correct level. There hasn't been a time when a technical writer did not exist. This exercise will help you take the thought forward.

After undertaking the guided exercise, you should be able to:
- identify a technical writer
- explain the skill set required to be an effective technical writer

The Significance of Technical Communication
Technical communication or writing is the art and science of making technical information easier to understand to the level of people it is aimed at. It may address a range of people from the common man to the gizmo freak who understands the datasheet. Technical communication is vital in today's world; imagine what we would do without that manual, which tells us what exactly to do or not to do with our DVD player or food processor.

Technical writing has five essential skills:

1. *Facility with technology:* A technical writer must have a technical bent of mind, a faculty to learn technicalities that he or she is not aware of. Writers have to be gadget savvy, be a netizen with the ability to navigate easily through technical jargon.

2. *Ability to write clearly:* The ability to understand technology and then present it to various levels in simple and easy to understand language of the audience is vital.

3. *Talent to present ideas graphically:* You know what they say; a picture is worth a thousand words. And since the human mind likes the idea of instant gratification, a picture tends to communicate more and in a more interesting way, be it a photo, an illustration or a graph. So get creative and make your writing more effective.

4. *Patience to troubleshoot:* Think about this one, what is life all about… hmm problems anyone? Sure right. Its about putting a problem in perspective, in context, thinking about what the answer could be or where could one go to get an answer, sounding off a few people to get a

few second opinions before analyzing them and coming up with an answer, which suits you. Never underestimate the power of your own mind, all you have to do is persist and insist that it comes up with an answer and it will!

5. *Ability to interact with cross functional teams (CFTs):* A technical writer is not automatically expected to be an expert but you are definitely expected to have the ability to interact with experts, with people of a cross functional team and the ability to ask questions with the expectation to understand and then communicate the same in your write-up.

Work Sheet

1. Define a technical writer.

2. What does a technical writer write: List any 10.

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3. Design a technical writer's tool list/skill sets while writing a technical document.

Exercise 2   Technical Writing

Objective: The idea behind this exercise is to actually do a bit of technical writing, thus applying theory to practice. This exercise will help you to build a basic framework, list the skill sets required while writing a user manual and come up with something that no one can do without – a gadget user manual.

After undertaking the guided exercise, you should be able to:

- write a user manual for any gadget

Indicators of excellence in technical communication

A technical writer does not necessarily need to get creative but needs to master the art of honest, bare to the bones writing. It's not about giving the audience flowery phrases or all the information in the world, but to get it exactly right and absolute.

Here are the seven basic steps you need to know.

1. *Honesty:* Write what you know, what you understand and do not mislead the readers. Give exactly the right amount of information and chuck the tendency toward wordiness.

2. *Clarity:* What you do not understand, you cannot communicate. Be clear in what you have to say, make sure that the words you are using are saying exactly what you want to say.

3. *Accuracy:* Double check your facts. Contact your SME, go over existing information, do all that you have to do to ensure that you are giving your audience the truth and nothing but the truth.

4. *Comprehensiveness:* The writer should ensure that the document he/she is writing is complete – from the beginning to the end – this writing is about giving the reader complete information about what the subject is all about. Therefore, start at the beginning; give the reader an introduction, the subject in its entirety, and the conclusion, so that the information can be used safely, effectively and efficiently.

5. *Accessibility:* The document may be lengthy but the information need not be. Make sure that the reader is able to navigate efficiently and instinctively to the information on the parts he needs. Break it all down to information chunks on single parts to make up the whole.

6. *Brevity:* Technical communication is about effective communication, not about overloading the reader with information. Keep it brief, keep out verbosity and think in bits and pieces. It's more like being on twitter and not on a blog.

7. *Professionalism:* Remember that a standard style sets an organization or writing apart from the rest. A style is set for a reason; therefore, always follow the rules where they apply.

Work Sheet

1. Keep in mind all the indicators of excellent writing and write an user manual for a gadget of choice. Ex TV, Refrigerator, DVD player, computer etc.

Exercise 3   Audience Analysis

Objective: The idea behind this exercise is to be able to identify the audience. A technical writer must know whom he/she is writing for. The document will not make sense unless the audience is identified and understood. The writer should be able to distinguish between the types of audience and judge the needs of the audience in effective technical communication.

After undertaking the guided exercise, you should be able to:
- identify the type of audience
- write material based on the type of audience

Basic classification of readers

There are two basic classifications of readers. They are:
  i) Primary audience: People who directly respond to your documents. They use the information given by you to do their jobs, act on your recommendations etc.
  ii) Secondary audience: People who do not respond to the document directly, but may influence the primary users.

You, as a writer must first identify the purpose, the educational background and the information needed, before writing.

It is important that the writer research the audience. There are basically four levels of audience.

1. *Technicians:* These are the people who build, operate, maintain, repair and troubleshoot the materials and products that the experts design and visualize. They have a high technical knowledge, which is of a practical variety.

2. *Executives:* These are the people who work with the experts and the technicians, as well as the product and materials created by them. Thus they make business, economic, administrative, legal, governmental, and life changing decisions.

3. *Non-Specialists:* These have the least knowledge but their interest is monumental because they would either want to buy the product or have already bought them and are looking for practical instructions and information, which will tell them what the product can or cannot do.

4. ***Experts:*** These are the people who know all about the subject, the product and the theory. They can teach you all. Mostly, it is not that the technician or a non-specialist is trying to understand what the expert knows, it is more like that the writer has to find a way to communicate or simplify what the expert wants to tell the audience or pass on the knowledge at the level it is aimed at.

Work Sheet

1. Keeping in mind all the indicators with regard to audience types and the kind of information that needs to go into a document, make a list of points that is required to analyze your audience. Create a power point presentation of the standard audience adaptations with tips and hints.

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2. Create a comprehensive audience profile sheet and then find a target audience to populate the same.

Exercise 4   Research Interviews

Objective: The idea behind this exercise is to be able to communicate with the Subject Matter Expert (SME) and get from him all the information needed for the document to be written. From pandering egos to adding a detail that no one ever has found before, it's the SME who holds the key to the excellence of the subject. One way to get the best answers is to put yourself in the experts' shoes. What would make you give your best is most probably what works here. So give it your best shot. And never forget to do your homework.

After undertaking the guided exercise, you should be able to:

* identify appropriate SME
* acquire information by conducting interview effectively

Know your SME

All SMEs come with certain character traits that can be associated with an expert in any field: Intellectually competitive, someone who would trade simplicity for control, someone who enjoys mastering complexity, and with a look down attitude over the lesser mortals, but you need to know how to conduct an interview with the expert and get the best for your document.

Preparing for the SME interview – What you need to know:

1. *Define your objectives:* Define the purpose and objective of the interview. What information are you looking for? Is it to do with problem solving or more information or the latest in that field? This will help you set the scope for the interview as well as the level of information you require while setting questions.

2. *Research the subject matter:* Do your homework, read all the material you can on the subject and on the SME. This will not only give you an idea on what questions to ask and where are the gaps in knowledge while writing your document. It will also help you understand your SME better, helping you ask the right questions, the right way.

3. *Be on time:* Show respect not just for the SME's busy schedule but also for yourself. Make this a habit of the lifetime and it will stand you in good stead. Arriving on time not just makes a good impression but shows that you are credible and professional, who is more than capable of handling expert information.

4. *Use active listening skills:* Pay attention, don't just hear… listen. This is very important and you will be subconsciously processing and analyzing the information that you already have. Listening facilitates analysis and helps you ask credible questions.

5. *Ask open ended questions:* Well, you don't really want a yes and no answers from your SME, unless you are confirming something. SME interviews call for open ended questions, which tap the brains of the expert, coaxing him to give you more than he wants to.

6. *Use critical thinking to identify missing links:* Never forget that you are a credible technical writer, who is well on the way to being the SME in the future. Active listening and open ended questions fuel the analysis of facts in your mind, automatically letting you sift through what has been said and what is missing.

7. *Don't make promises you are not authorized to make:* Do not promise a draft or the finished product on a certain date to the SME unless you are authorized to make that promise or if you have already spoken to your manager. Never set unrealistic expectations unless you have what it takes to back it up.

8. *Ask for permission to follow up:* An interview is never over until the document is written and unless you are superhuman you cannot anticipate all the questions before beforehand, during an interview. The actual test is when you are writing the document. Ask for SME's permission for a follow up with a question or additional information.

9. *After the interview:* They say working on the job at hand while it is fresh on the mind is the best tip ever. Also listing what you have learnt new, what you have confirmed and last but not the least the questions you still have on your mind would be a good yardstick.

Work Sheet

1. Write a document on the product of your choice, identify the SME and conduct an interview, keeping in mind all the points identified and detailed above.

Exercise 5   Technical Writing Structure

Objective: The idea behind this exercise is to be able to describe the chosen subject in terms of structure and function. This point would be the foundation on which technical writing lies.

After undertaking the guided exercise, you should be able to:

- identify the importance of information structure and organize information.

Data Without Structure

You should be able to identify the structure in which the data should flow. What is most important versus what is most useful. Generally, warnings come first. Most wordy and flowery introductions are a waste of time for the technical reader, they do not tend to read from start to finish but look for information chunks, which tell them what not to do or what to do.

Descriptions vs Instructions – Understanding the role:

1. *Title or section heading:* If the description of the item is to be a separate document, give it a title. If it is to be a part of the body, give it a section heading. Be crystal clear regarding how you want the information.

2. *General introduction:* This will provide the reader with the general information of the product or mechanism, which he will need to understand the detailed information that will follow. It will clue him in as to what he is getting into.

3. *Part by part description:* This is a very important part of the document; it will give the reader an itemized description as well as the function and instructions with regard to that particular part. This needs to include function, operating principles, warnings, appearance and all its uses.

4. *Conclusion:* As is with the introduction, there is no need for an elaborate conclusion. This part needs to be brief and could make an interesting observation with regard to the product. Briefly summarize or characterize the item in the conclusion without interfering with the flow of the document.

Work Sheet

1. Choose an object or subject of your choice and in detail describe its parts and functions. Ex TV, shoe, torch, baby's diaper among others.

Exercise 6   Technical Writing Style

Objective: The idea behind this exercise is to be able to structure the technical documents, write the documents in a concise style, and construct unambiguous and clear sentences, while avoiding commonly made mistakes. You will learn that technical writing is all about adopting a style that would be understood by even a layman.

After undertaking the guided exercise, you should be able to:

- Create a style sheet for technical writing

Concise Communication

From a malt drink to the over-the-counter tablets that we buy, everything comes with a literature, which needs to minimize jargon so as to be understood by all. Therefore, it is essential for you to develop a simple and lucid style of writing. A document should be written in such a way that it does justice to the spirit of conciseness, clarity and comprehensiveness.

Crystal clear writing – Sentence construction

1. *Word order:* Using the right words in the right place. The easiest rule you could follow is to place the word or phrase as close as possible to the other word or phrase related to it in meaning or grammar.

2. *Ambiguity:* This is something that you need to avoid, if you want your sentence to make perfect sense. Words must be placed in such a way so as to give meaning to a varying range of elements within the sentence.

3. *Brevity:* Remember that no one really has the time to read long winding sentences in literature. Keep wordiness at bay and say exactly what you have to say and not a word more.

4. *Use lists:* Lists are useful tools to shorten the length of your sentences. They help the user focus on what needs to be done.

5. *Focus on action words:* Action words or verbs speak louder than anything else. Don't express it with nouns : words that end with suffixes like –sion, -tion, -ment, -ing, -ion, -ance.

6. *Emphasize the most important data:* Placing the most important data in the right place in a sentence will help you shorten the length of the sentence.

7. **Express parallel elements in parallel structure:** The coordinating elements in a sentence should be stated in the same grammatical form. The sentence you create should have a sustained recognizable pattern.
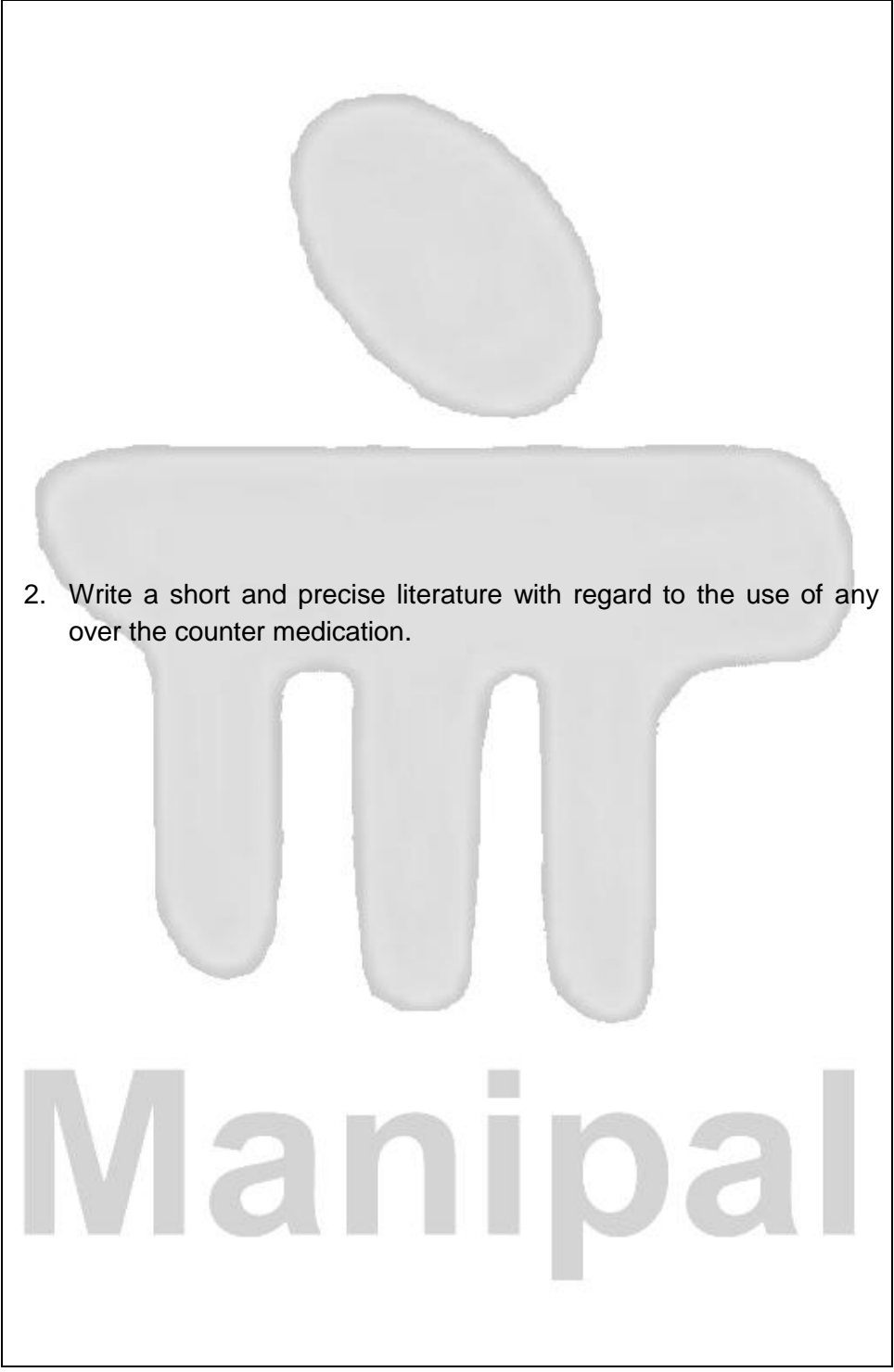
Guidelines to clear and specific writing

1. Use active voice
2. Use present tense
3. Use direct speech
4. Use specific words
5. Avoid unnecessary jargon
6. Use positive constructions
7. Avoid long noun strings
8. Avoid pompous words

Work Sheet

1. Create a style sheet incorporating all the points vital to technical writing.

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2. Write a short and precise literature with regard to the use of any over the counter medication.

3. Most articles of writing follow either the British or the American English. The idea here is to know enough what goes where. It is important that the writer learns and adheres to what differentiates the two. List 25 examples for differences between British and American English.

Exercise 7   Technical Communication Editing

Objective: The idea behind this exercise is to be able to learn the role of a technical editor, understand and appreciate the tasks performed by the editor and learn and memorize the proofreading symbols and abbreviations. The technical writing editor does not change the style of the writer, but plays a role where he/she ensures that the rules of technical writing are followed.

After undertaking the guided exercise, you should be able to:

- edit a technical document

Types of Editing
Technical writing is all about conveying the right amount of information in as less words as possible. Clarity, precision and brevity are its key indicators. A technical editor checks the document for organization and content, otherwise called as macro editing, as well as for phrasing, grammar and punctuation, which is micro editing.

Proof Reading
Proof readers concentrate mainly on three areas, which need to be checked for accuracy and precision. It is important that a technical document be proof read because it is meant to be read and understood by the target audience.

1. *Content:* The content of a technical document needs to be checked against a reliable reference for accuracy. Inconsistencies in data should be paid special attention to.

2. *Spelling:* Misspellings are the most obvious and the most irritating errors in any document and double checking is necessary to avoid these. The sentences should be checked for context as well as spelling.

3. *Mistake checklist:* Editors must pay minute attention to mistakes in grammar, punctuation, language used and tenses. Accuracy of titles, headings and illustration captions, usage of proper nouns, completeness of the document must be checked without fail.

Work Sheet

1. Create a table with all the proofreading symbols that a technical editor uses.

2. Apply the rules and symbols of technical editing on the document given below:

The textbooks market does not operate according to the same economic principles as a normal consumer market. First, the end consumers (students) do not select the product, and the people choosing the product (faculty) do not purchase the product. Therefore, price is removed from the purchasing decision, giving the producer (publishers) disproportionate market power to set prices high.

This fundamental flaw in the market is blamed as the primary reason that prices are out of control. The term "Broken Market" first appeared in Economist James Koch's analysis of the market commissioned by the Advisory Committee on Student Financial Assistance. [1]

This situation is exacerbated by the lack of competition in the textbook market. Consolidation in the past few decades has reduced the number of major textbook companies from around 30 to just a handful. [2] Consequently, there is less competition than there used to be, and the high cost of starting up keeps new companies from entering.

Students seek relief from rising prices through the purchase of used copies of textbooks, which tend to be less expensive. Most college bookstores offer used copies of textbooks at lower prices. Most bookstores will also buy used copies back from students at the end of a term if the book is going to be re-used at the school. Books that are not being re-used at the school are often purchased by an off-campus wholesaler for 0-30% of the new cost, for distribution to other bookstores where the books will be sold.

Students who look beyond the campus bookstore can typically find lower prices. With the ISBN or title, author and edition, most textbooks can be located through online used book sellers or retailers.

Most leading textbook companies publish a new edition every 3 or 4 years, more frequently in math & science. Harvard economics chair James K. Stock has stated that new editions are often not about significant improvements to the content. "New editions are to a considerable extent simply another tool used by publishers and textbook authors to maintain their revenue stream, that is, to keep up prices," [3] A study conducted by The Student PIRGs found that a new edition costs 12% more than a new copy of previous edition, and 58% more than a used copy of the previous edition. Textbook publishers maintain these new editions are driven by faculty demand. The Student PIRGs' study found that 76% of faculty said new editions were justified "half of the time or less" and 40% said they were justified "rarely" or "never." [4] The PIRG study has been criticized by publishers, who argue that the report contains factual inaccuracies regarding the annual average cost of textbooks per student. [5]

The Student PIRGs also point out that recent emphasis on electronic textbooks, or "eTextbooks," does not always save students money. Even though the book costs less up-front, the student will not recover any of the cost through resale. [6]

Exercise 8   Systems Development Life Cycle

Objective: The idea behind this exercise is to be able to identify the phases in System Development Life Cycle, which relates to models and methodologies that people use to develop systems, generally computer systems. You will also be able to compare the strengths and weaknesses of SDLC.

After undertaking the guided exercise, you should be able to:

- develop your own SDLC model.

SDLC overview
SDLC is a conceptual model used in project management that describes the stages involved in an information system development project from an initial feasibility study through maintenance of a completed application.

SDLC phases
Various SDLC methodologies have been developed to guide the process involved and have a standard 6-step phase.

1. *Feasibility:* The feasibility study is done to understand and determine if the project should get the go ahead. If it's a yes, then the study will produce a project plan and budget estimates for the future stages of development.

2. *Analysis:* The analysis phase gathers the requirement for the system. It includes a detailed study of the business needs of the organization.

3. *Design:* Design focuses on high level needs like what programs are needed and how they are going to interact including low-level (how the individual programs are going to work), interface (how the interfaces are going to look like) and data design (what data will be required)

4. *Implementation:* During this phase, the designs are translated into code, and programs are written using a conventional programming language or an application generator.

5. *Testing:* In this phase, the system is tested. Normally, the programs are written in a series of individual modules, which are subjected to a detailed testing and then the separate modules are brought together and the system is tested as a whole.

6. *Maintenance:* All systems invariably need maintenance. Software changes under many circumstances, including unexpected value inputs and therefore, needs to be developed in order to accommodate changes.

Work Sheet

1. Develop your own SDLC model with details on each phase on a project of your choice.

Exercise 9   Technical Communication Ethics

Objective: The idea behind this exercise is to be able to identify the role of ethics in technical communication and be able to judge the good and the bad. Isn't life all about ethics and commandments? The ones you choose to follow personally may not matter here, but technical writing is quite rigid when it comes to ethics.

After undertaking the guided exercise, you should be able to:

- analyse the status of ethics in technical writing

Legal vs Ethical

What's ethical is not necessarily legal. Law is a system of rules, enforced through a set of institutions used as an instrument to help the good stay good and the bad down where it belongs. Legal systems elaborate rights and responsibilities in a variety of ways, while ethics is a major branch of philosophy encompassing right conduct and good life. Ethics is a study of what is right and good usually involving a deciding course of action in a dilemma offering several possibilities. Ethical issues in technical communication involve:

1. ***Plagiarism vs proper credit:*** Using somebody else's work to support one's point in communication is allowed, provided that the person gets credit for the work that has been done. Stealing someone else's work is not just ethically wrong but is also illegal when it can be proved.

2. ***Work ethics and harassment:*** Fair workplace is a basic human right and harassment or discrimination based on gender or any other premises is ethical, legal offence.

3. ***Malicious actions:*** It is human to err. The idea is to never jump into the conclusion that an action, no matter how awful, was deliberate, unless proved otherwise. But always remember that truth is clear-cut:

- Do not falsify data or state something as truth when you know it is not.
- Do not deliberately misinterpret, misrepresent facts.
- Distinguish between facts and opinions.
- Do not assume that the expert is always right, double check.

Work Sheet

1. Using a case in point, anything that has been in the news with regard to ethical right or wrong, analyze why that case is ethically right or wrong.

   Ex: Film maker Madhur Bhandarkar's case with the starlet.

   Fashion Designer Anand Jon and his case.

Exercise 10   Grammar intel

Objective: The idea behind this exercise is about reiterating the correct grammar usage while writing. This exercise is more of a refresher course and the powerpoint deck you will create as part of the exercise will come in handy at all points of your career. Consider it a future investment.

After undertaking the guided exercise, you should be able to:

- identify and use correct grammar while writing for technical document

All about grammar

At this stage it's not about what you know and what you don't know, its about double checking that what you know is the standard. This is where a ready reckoner comes in handy. So go corporate and create a power point deck with cards for each question, concise, precise and to the point. Use the internet or grammar text books or anything that is handy to help you finish this super-interesting exercise.

Work Sheet

1. Create an interesting power point deck incorporating all the grammar set points given below. This is your chance to get creative and give a personal touch to something that needs to stay with you all through your writing career. Make it funny, make it serious, use cartoons, thought balloons, family trees anything that helps you remember and understand better.

   - Types of nouns with examples for each.

   - Articles used in English language with examples.

   - Types of pronouns with examples.

   - Prepositions and relations expressed by prepositions.

   - Categorize verbs and explain the relationship between verbs and tenses with examples.

   - Types of Adjectives with examples for correct usage.

- What are adverbs, list of types of adverbs with usage.

- What are conjunctions, list the classes with appropriate examples.

- What is an injunction, make a deck with examples.

- What is a sentence, list out types of sentences with examples.

- What is a clause? List out types with example.

Exercise 11   Writing Datasheet

Objective: This exercise will help you learn how to write a datasheet, the basics, the concept and the general format used to write a datasheet.

After undertaking the guided exercise, you should be able to:

- write a datasheet for any product

All about the datasheet

A datasheet must summarize the product or a system in its entirety in such a way so as to give the readers a picture of what the product can do, its range, interest them enough to buy the product or interest them into getting more detail.

- A datasheet must list facts and figures.
- Must have a factual tone and must contain hard data.
- It is important that you understand the audience before writing the datasheet. A general user may look at the benefits, while a highly technical audience would prefer to look at specifications.

Every datasheet must contain the following elements

1. *Description:* It is vital that a datasheet start with a precise and concise description of the product.

2. *Visual element:* A visual element is a must and it could be anything including a snapshot, diagram, schematic representation among others.

3. *Key features and benefits:* The users will mostly go straight to this point and therefore this is the most important aspect of the datasheet. Normally, three key features and three benefits are considered ideal.

4. *Specifications:* Specifications of the product needs to be included for both hardware and software packages. It is important that the features, which set the product from competitors are highlighted.

5. *Requirements:* List all the software and hardware that is required to support your product.

6. *Contact Information:* Have all the contact information at the bottom of the datasheet including copyright and trademark information.

Sample Datasheet:

Nokia N95 8GB
Data Sheet

Nokia Nseries Experiences

MEDIA
- Crystal clear 2.8" QVGA (240 x 320) display with up to 16M colors
- Stream media files from compatible media portals
- The real web with Nokia Web Browser with Mini Map
- Visual Radio support

MUSIC
- Digital music player supports MP3/AAC/eAAC/eAAC+/M4A/WMA with playlists
- Up to 10 hours playback
- Dedicated music keys
- Stereo FM radio (87.5-108MHz)
- Integrated stereo hands free speaker

NAVIGATION
- Built-in GPS: Nokia Maps with integrated GPS, Assisted GPS (A-GPS) support
- Maps data is available for over 150 countries, navigation supported for over 30 countries, 15 million location highlights

PHOTO AND VIDEO
- Supports multiple video formats (MPEG4; AVC/H.263/H.264, RV)
- Up to 3 hours 35 minutes of video playback
- Image and video uploading from gallery to compatible online albums or blogs
- On-device photo and video editor (manual & automatic)
- Easy to share images and video via TV out, MMS, email, Bluetooth wireless technology
- Easy to manage, organize and transfer images and video clips over WLAN/UPnP and USB
- Easy and convenient printing via WLAN/UPnP, PictBridge, Bluetooth wireless technology

EXPLORE AND CONNECT
- E-mail (SMTP, IMAP4, POP3), MMS, SMS
- View common email attachments - .doc, .xls, .ppt, . pdf
- Contacts, Calendar, To-do, Notes, Recorder, Calculator, Clock, Converter
- Synchronization of Calendar, Contacts, To-do, Notes, Email

Planned Market Introduction
Q4 2007

Category
Multimedia Computer

Key Features
Stunning Screen, Massive Memory
Luminous 2.8" QVGA display – watch video, view vibrant images, web pages and maps. Store your media and files on 8GB of built-in memory: carry up to 20 hours of video, or up to 6000 songs.

Search or Explore: Nokia Maps
Built-in GPS with Assisted GPS (A-GPS) support and maps data for over 150 countries and navigation support for over 30 countries.

Higher Speed – Less Waiting – More Fun
Fast ways to connect people with their passions and with people who share them, through WLAN or HSDPA (3.5G) with up to 10 times faster download than with 3G.

Slide and Play
Unique 2-way slide for fast transition from a powerful multimedia computer to a multimedia player

Shoot and Share
5 megapixel camera with Carl Zeiss optics and auto focus. DVD-like video quality with stabilization feature, VGA resolution and up to 30 fps.

Technical Profile

System:	WCDMA2100 (HSDPA), EGSM900, GSM850/1800/1900 MHz (EGPRS)
User Interface:	S60 3rd Edition, Feature Pack 3.1
Dimensions:	99 x 53 x 21mm (L x W x H), (96 cc)
Weight:	128 g
Standby time:	Up to 280 hrs (3G/GSM)
Talk time:	Up to 210 min (3G)/ 300min (GSM)
Display:	2.8 inch QVGA (240 x 320 pixels) with up to 16 million colors and ambient light detector
Battery:	Nokia Battery (BL-6F) 1200mAh
Memory:	Up to 8GB in-built memory

Connectivity & Data Services
- WLAN 802.11b/g & UPnP (Universal Plug and Play)
- USB 2.0 Full Speed and TV out
- 3.5 mm stereo headphone plug
- Bluetooth stereo audio (A2DP)
- IrDA (Infrared)

Main Camera

Resolution of images:	up to 5.0 megapixels (2592 x 1944)
Resolution of videos:	VGA up to 30 fps
Image capture storage:	up to 3,600 pictures
Video capture storage	up to 20 hours (VGA, 30 fps)
Digital zoom:	up to 20x (still image), 8x (video)

NOKIA
Nseries

Work Sheet

1. Write a datasheet for a product of your choice ex: cell phone, camera, television etc.

Exercise 12   Brochure Writing

Objective: The idea behind this exercise is to learn to write a brochure. It involves the points that need to be focused on while writing a brochure. The most important thing to understand about brochure writing is that it is not about information, but about persuasion. A brochure provides a larger canvas to persuade people to learn more about or buy what is being sold.

After undertaking the guided exercise, you should be able to:

- write a brochure.

How to write a brochure

Brochure writing is more of an art meets. It gives the writer an opportunity not only to display his creative ideas and flowery vocabulary, but also the innate intelligence and marketing ability needed to sell a product or service.

- A brochure must present information both clearly and convincingly, following a strategically sound persuasive structure.

- The cover should present the idea and not just the product name.

- The brochure copy should be aimed at the customer and not at talking about the product.

- The brochure should address the needs of the customer before moving on to the features and benefits of the product.

- The brochure should focus more on the benefits of the product and then on the features.

- Remember that the customer needs to relate to the product or service. The brochure must answer all the questions that they have.

- The brochure is not a datasheet and should not weigh heavy on technical points. The technical information is better integrated into the brochure as a visual point, in a snapshot, diagram or schematic representation.

Sample Brochure

Work Sheet

1. Write a brochure on your chosen subject, product or service for ex: Travel brochure, Restaurant brochure or a Resort brochure.

Exercise 13   Writing Business Plan

Objective: The idea behind this exercise is to learn to write a business plan, which is a formal statement of a set of business goals. The statements range from organizational mission to financial goals to what the company expects to do and be.

After undertaking the guided exercise, you should be able to:

• write a business plan

Writing a business plan

A professional business plan is a reiteration of your intention to start a business. The business plan must outline your goals, expected costs, marketing plan and exit strategy. A business plan draws up the path, which your business is expected to follow. It summarizes business needs and outlines goals and objectives.
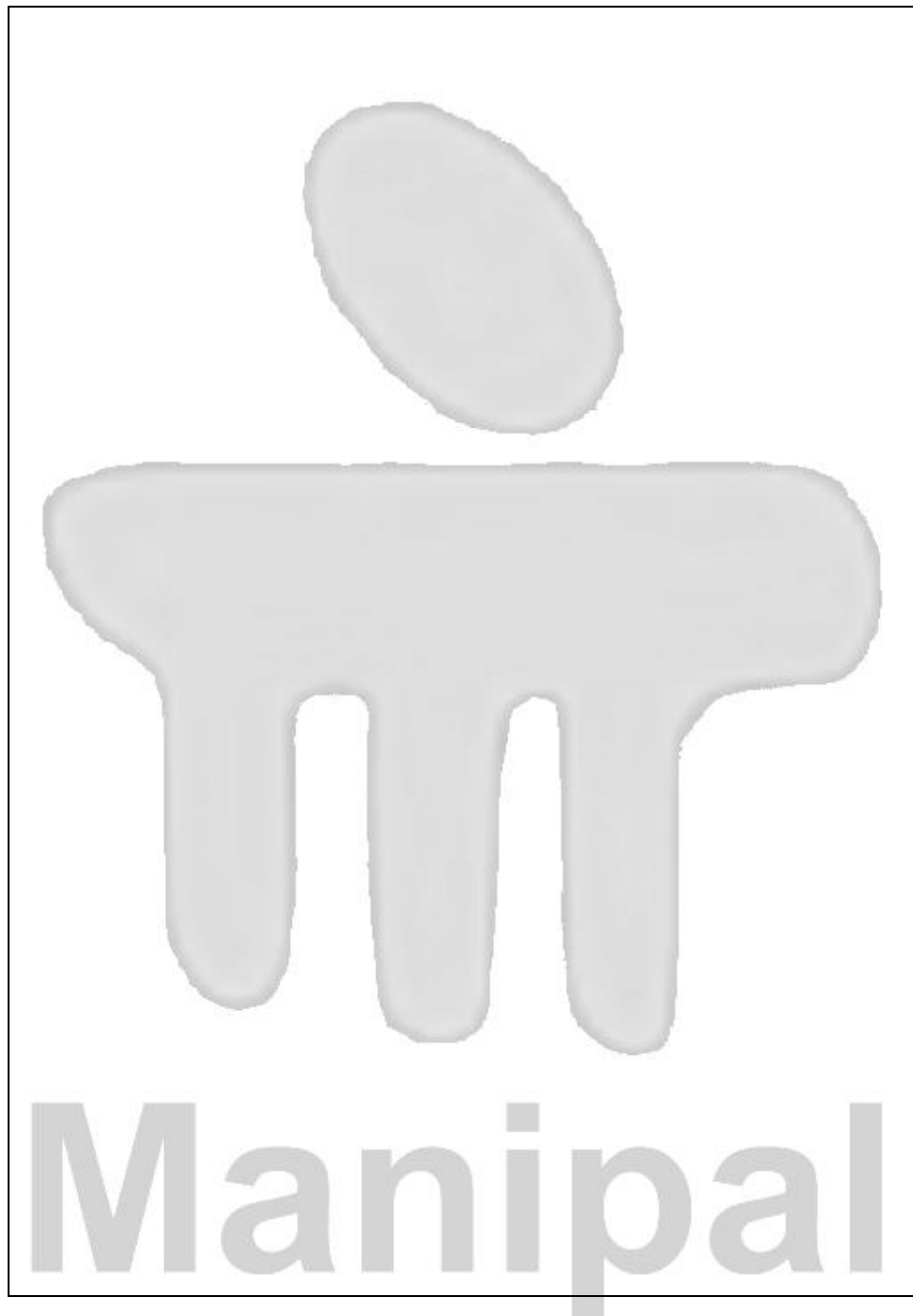
A standard business plan should include the following elements:

• Organization's mission statement
• Formal statement of business goals
• Milestones
• Financial goals and statement
• Description of the business

Work Sheet

1. Write a business plan to start up a company including all the standard elements.

Exercise 14   Writing Abstract

Objective: The idea behind this exercise is to learn to write an abstract, which essentially is a brief summary or a condensed report of anything written in detail. The abstract is meant to give the reader a quick idea of what the in-depth paper is all about, thus entice the user into reading the entire report.

After undertaking the guided exercise, you should be able to:

Abstract writing

Abstracts are part and parcel of a technical writer's career and condensing any articles into a single paragraph or into a limited word section without losing the essence of the report is a work of art. An abstract can be written on just about anything from a heavy research article to a novel. It acts as a point of entry to any kind of a write-up. The typical length runs from 100 to 500 words and hardly runs for more than a page.

The abstract needs to focus on 5 sections:

Focus/Background: The most important part of the report, the most interesting quote of the article, the best part of a novel, anything can make the opening lines of the abstract.

Excerpts: Storyline of the novel or parts of the research including problems faced, methodology followed, make the body of the abstract.

Conclusions: A brief review as to what the results of the paper has been or conclusions of the report make the tail end of the abstract.

Work Sheet

1. Write an abstract on the attached report

    U.N. issues landmark report on global warming

    VALENCIA, Spain – Global warming is "unequivocal" and carbon dioxide already in the atmosphere commits the world to sea levels rising an average of up to 4.6 feet, the world's top climate experts warned Saturday in their most authoritative report to date.

    "Only urgent, global action will do," said U.N. Secretary – General Ban Ki-Moon, calling on the United States and China – the world's two biggest polluters – to do more to slow global climate change. "I look forward to seeing the U.S. and China playing a more constructive role," Ban told reporters. "Both countries can lead in their own way."

    Ban, however, advised against assigning blame. Climate change imperils "the most precious treasures of our planet," he said, and the effects are "so severe and so sweeping that only urgent global action will do. We are all in this together. We must work together."

    Islands, coastlines, species imperiled

    According to the U.N. panel of scientists, whose latest report is a synthesis of three previous ones, enough carbon dioxide already has built up that it imperils islands, coastlines and a fifth to two-thirds of the world's species.

    As early as 2020, 75 million to 250 million people in Africa will suffer water shortages, residents of Asia's large cities will be at great risk of river and coastal flooding, according to the report.

    Europeans can expect extensive species loss, and North Americans will experience longer and hotter heat waves and greater competition for water, says the report from the U.N. Intergovernmental Panel on Climate Change, which shared the Nobel Prize with Al Gore this year.

    The panel portrays the Earth hurtling toward a warmer climate at a quickening pace and warns of inevitable human suffering. It says

emissions of carbon, mainly from fossil fuels, must stabilize by 2015 and go down after that.

In the best-case scenario, temperatures will keep rising from carbon already in the atmosphere, the report said. Even if factories were shut down today and cars taken off the roads, the average sea level will reach as high as 4.6 feet above that in the preindustrial period, or about 1850.

"We have already committed the world to sea level rise," the panel's chairman, Rajendra Pachauri, said. But if the Greenland ice sheet melts, the scientists said, they could not predict by how many feet the seas will rise, drowning coastal cities.

Climate change is here, they said, as witnessed by melting snow and glaciers, higher average temperatures and rising sea levels. If unchecked, global warming will spread hunger and disease, put further stress on water resources, cause fiercer storms and more frequent droughts, and could drive up to 70 percent of plant and animal species to extinction, according to the panel's report.

The report was adopted after five days of sometimes tense negotiations among 140 national delegations. It lays out blueprints for avoiding the worst catastrophes – and various possible outcomes, depending on how quickly and decisively action is taken.

"The world's scientists have spoken clearly and with one voice," Ban said, looking ahead to an important climate conference in Bali, Indonesia, next month. "I expect the world's policy makers to do the same."
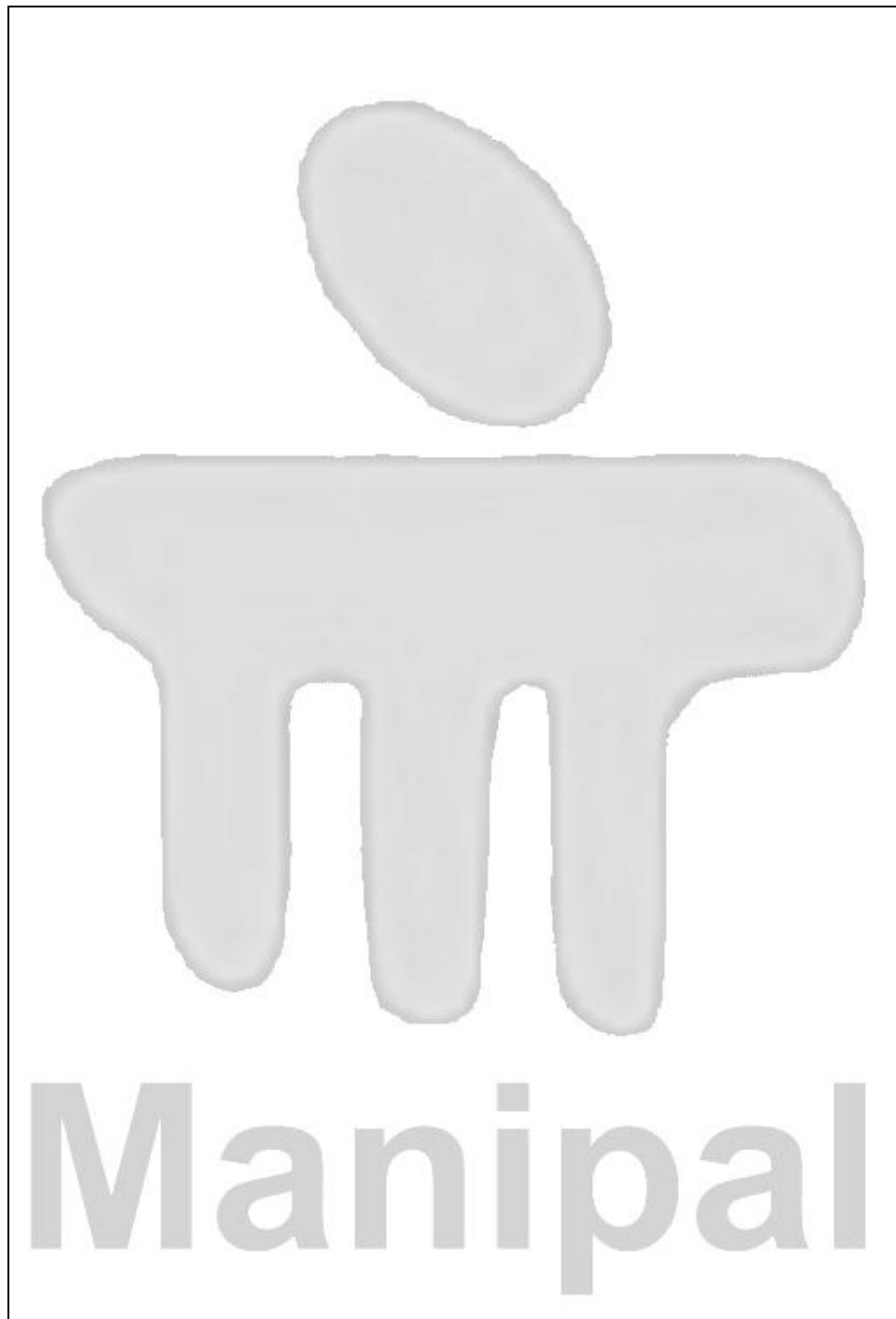
Exercise 15   Writing Project Report

Objective: The idea behind this exercise is to learn to write a good project report. It must be remembered that a project report is an academic dissertation, which you will be graded on and not a light article.

After undertaking the guided exercise, you should be able to:

- write a project report

Elements of a project report

A project report contains not just a routine information, but also analysis of the subject involved. The writer must establish criteria, present arguments, work out principles, pose questions and arrive at well thought out answers, analyze alternatives and so on.

Typically a project report must have the following elements:

- Title
- Abstract
- Acknowledgements
- Table of Contents
- List of Tables
- List of Figures
- List of Symbols and Abbreviations
- Introduction: Here the chosen topic is highlighted and its importance discussed.
- Review of Literature: Work done on the topic by the previous researchers is debated.
- Methods and Materials / Methodology: The quality of the methodology employed is important and the report is judged on it.
- Results and Discussion: Procedures in the methodology section, obtained results and data collected will be contained here in addition to appropriate statistical analyses.
- Summary and Conclusions: The conclusion will be brought to sharp focus and makes for easy reading.
- Appendices: Appendices are the sections used for giving supplementary information, thereby not to cluster the main chapters.
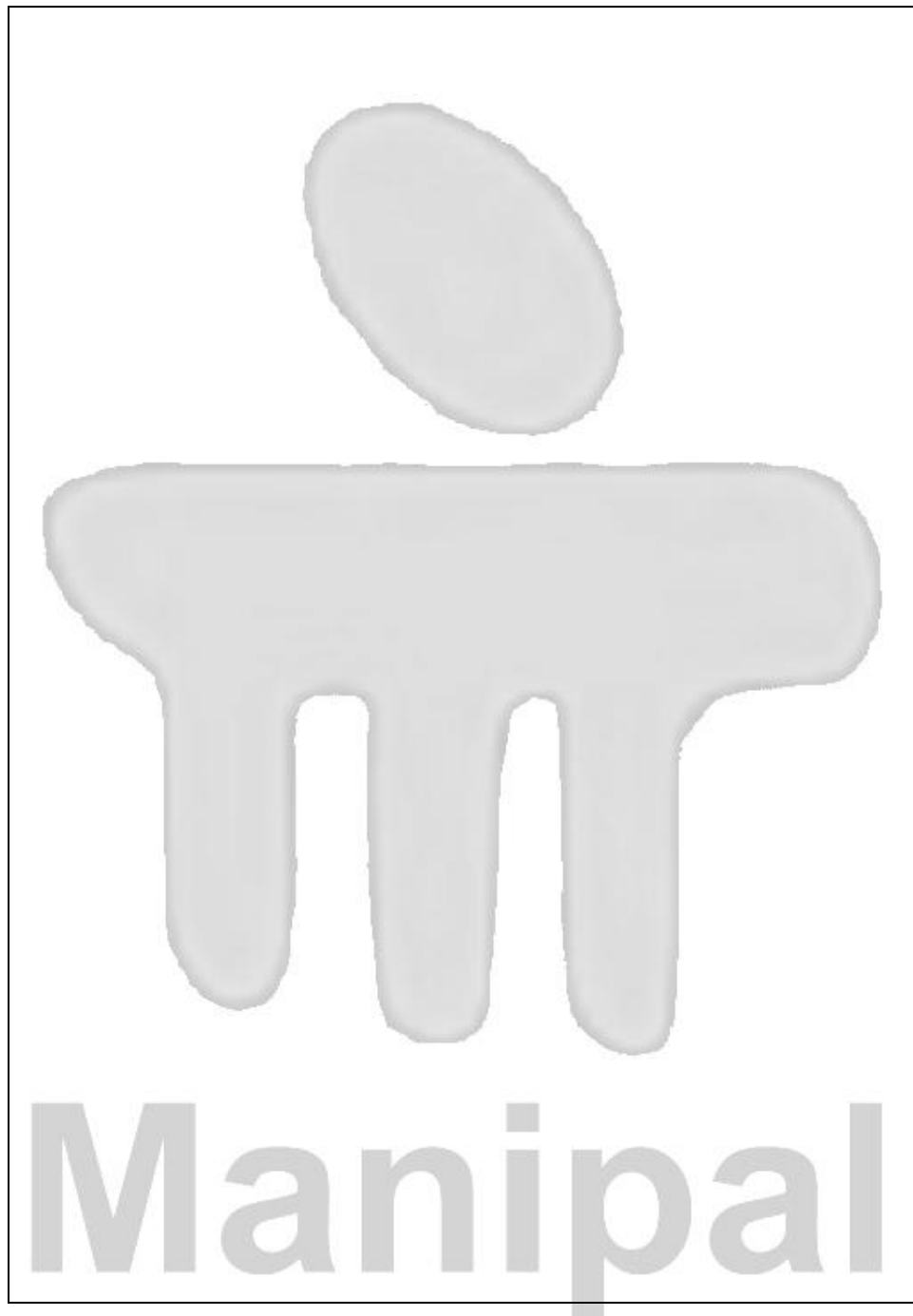
- References and Bibliography: References are works directly referred to or quoted from in the text of the report, while Bibliography is the list of works consulted or used for the project work.

Work Sheet

1. Write a project report on the project of your choice, involving all the elements.

Exercise 16   Writing Instruction Manual

Objective: The idea behind this exercise is to learn to write a simple instruction manual, which is a part and parcel of everyday life.

After undertaking the guided exercise, you should be able to:

• write an instruction manual on the usage of any product

Writing the instruction manual

An instruction manual is something that a user takes for granted, and is part of the literature that accompanies a product or a service. An instruction manual is one of the most important documents involved in our daily life.

The instruction manual should not be complicated and overwhelming. It must be made as simple as possible.

The instruction manual must involve the following elements:

Concept: Depending on the complexity of the product or service about to be described from how to play the guitar to assembling of a toy plane, the reader must get the concept and the description first.

Requirements: Logic is the mainstay of any instruction manual and must list the items required to assemble the unit of usage

Break up: Step by step instructions in small and easy bullet pointed sentences make more sense to the reader

Do it yourself: If the manual is for an assembly or a recipe or self learning, the writer must first apply the instructions and ensure that the manual is understood and produces the expected result.

Simpler the better: The manual is about simplicity, precision and conciseness. There is neither the need nor the patience on the part of the reader for flowery or complicated language.

Work Sheet

1. Write a simple instruction manual on the usage of any of the following products ex., matchbox, gas stove, iron box, etc.

Acknowledgments, References & Suggested Readings:

1. Bowles, Dorptju A. & Borden, Diane L. (2000). *Creative Editing*, U.S.A: Wadsworth Thomson Learning.
2. Graham, B. (2001). "*Identity crisis: the persona as a tool for formulating and evaluating information design.*" Presentation (progression) at the 48th Society for Technical Communication Conference, 13-16 May 2001, Chicago, IL.
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4. Hart, G. J. (2001). "Audience analysis: looking beyond the superficial." p. 105-107 in: proceedings, STC 48th Annual Conference, 13-16 May 2001, Chicago, Ill. Soc. Tech. Comm., Arlington, Virg. 608 p.
5. Markel, Mike. *Technical Communication, Situation and Strategies*, New York: St. Martin Press.
6. Schriver, K.A. (1997). *Dynamics in Document Desig,* New York: John Wiley and Sons, Inc.
7. Shouba, Terryl K. (1999). *Bringing in the SMEs*, *Intercom*, VA: STC Arlington.
8. http://wwwold.ccc.commnet.edu/writing/symbols.htm

Guidelines for Conducting Practical Exercises

'Technical Communication (Practical)' [BT 0084], is a two-credit practical subject, which means you will have to do practical related activities for 60 hours. It contains 16 Exercises. Practical related details are given in Table 1 and 2 (it covers titles of the exercises, duration and marks allotted for each exercise).

Guided and Unguided Exercises

In this practical subject, there **are 14 three hour sessions conducted either continuously or scheduled as per the convenience of the Learning Centers.** The first 13 sessions (for about 39 hours) are set apart for **Guided Exercises (GE);** during these sessions, 16 practical exercises need to be finished. The session No. 14 is practice session where you can repeat or practice any of the exercise already completed by you. In the course of these exercises, the Learning Center Faculty will provide you guidance, arrange for presentation (wherever necessary), and clarify your doubts. You are required to study the contents of this book, follow the instructions provided, and observe the demonstration Exercises, carry out the Exercises (wherever instructed by the Learning Center Faculty and, as per facilities available at your LC), prepare the Practical Journal **(in the format as required by LC**; remember it is a activity record and do it carefully) and submit the Practical Journal to your Learning Center Faculty. Each Exercise has assessment component, which will be carried out by your LC Faculty. Your attendance is compulsory for these Exercises.

The assessment during these 16 Guided exercises account for 70 marks (out of a total of 100 marks for two credit Practical subject). In short, during these Guided Exercises, your Learning Center Faculty will offer you guidance and perform assessment of your work.

On the day stipulated by the University, you have the last session (for about 3 hours), which is set apart for **Unguided Exercise(s) (UGE),** where one or more Exercises from among the Exercises done earlier will be assigned to you; you have to do the assigned Exercise(s) on your own without taking help from your Learning Centre Faculty. The Unguided Exercise(s) is (are) intended for practical examination; yes, there will be an External Examiner. **The Unguided Exercise(s) part carries 30 marks.**

To complete successfully the Technical Communication – Practical (BT 0084), you have to score a combined average of 40% (i.e., 40 marks) in both Guided and Unguided parts together and a minimum of 35% in each part (i.e., 25 marks in Guided part and 11 marks in Unguided part). In case of failure in either or both the parts, you have to redo the concerned part(s).

In the Worksheet of each Exercise, the specific details regarding the practical exercises are given.

Table 1: Time Allotment for Practical Exercises of BT 0084

Title(s)	Session No.(s)	Time in Hours
I Introduction	1	30 mins
II Guided Exercises		
Exercise 1 – Technical Writer	1	1 hr
Exercise 2 – Technical Writing	1	1.5 hrs
Exercise 3 – Audience Analysis	2	3 hrs
Exercise 4 – Research Interviews	3	2 hrs
Exercise 5 – Technical Writing Structure	3	1 hr
Exercise 6 – Technical Writing Style	4	2 hrs
Exercise 7 – Technical Communication Editing	4	1 hr
Exercise 8 – Systems Development Life Cycle	5	1 hr
Exercise 9 – Technical Communication Ethics	5	2 hrs
Exercise 10 – Grammar Intel	6 + 7	6 hrs
Exercise 11 – Writing Datasheet	8	3 hrs
Exercise 12 – Brochure Writing	9	3 hrs
Exercise 13 – Writing Business Plan	10	1.5 hrs
Exercise 14 – Writing Abstract	10	1.5 hrs
Exercise 15 – Writing Project Report	11	3 hrs
Exercise 16 – Writing Instruction Manual	12 + 13	6 hrs
Practice Session	14	3 hrs
III Assigned Unguided Exercises (Conducted by the External Examiner)		3 hrs

Time for counseling and hands on work during Guided   exercises :   42 hrs
Time for reading the material and other practical related work   :   15 hrs
Time for Un-guided Exercise(s):   :   3 hrs

 (As per 2 credit norms Total Time)   **60 hrs**

Table 2: Exercise wise break up of marks for Reporting (BJ 0032)

Details	Marks
I Guided Exercises	**70 marks**
Guided Exercises Break Up	
Exercise 1 – Technical Writer	4
Exercise 2 – Technical Writing	3
Exercise 3 – Audience Analysis	5
Exercise 4 – Research Interviews	5
Exercise 5 – Technical Writing Structure	5
Exercise 6 – Technical Writing Style	5
Exercise 7 – Technical Communication Editing	6
Exercise 8 – Systems Development Life Cycle	3
Exercise 9 – Technical Communication Ethics	4
Exercise 10 – Grammar Intel	4
Exercise 11– Writing Datasheet	4
Exercise 12 – Brochure Writing	4
Exercise 13 – Writing Business Plan	4
Exercise 14 – Writing Abstract	4
Exercise 15 – Writing Project Report	5
Exercise 16 – Writing Instruction Manual	5
II Assigned Unguided Exercises (Conducted by the External Examiner)	**30 marks**
Total practical marks for BT 0084 – Technical Communication – Practical	**100 marks**

Model Question Paper

(For Final Practical Examination)

Technical Communication (Practical) [BT 0084]

Total Marks : 30   **Duration   : 3 hours**

A. Practical Question/Assignment (Un-Guided Exercise)   : 15 Marks

1. Manipal Education Limited, Manipal has decided to establish a computer center to train its employees in using modern means of recording, storing, retrieving and transmitting information. You have recently been employed by the company to set up this centre and then to train its employees in using the computer facilities for day to day operations. Write a technical proposal, containing a comprehensive plan for setting up this centre and training the employees. The proposal is to be submitted to the Vice-President (Engineering).

2. Write a technical description of using a semi-automatic washing machine.   **: 05 Marks**

B. Practical Journal/ Record Book   : 05 Marks

C. Viva-Voce   : 05 Marks

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* The number of questions and distribution of marks in the model are flexible and could be altered as per the necessity.