

ALLAMA IQBAL OPEN UNIVERSITY

Department of English Language & Applied Linguistics

COURSE INFORMATION TABLE

Course Code:	1425 / 8504 / 9409 / 5027
Course Title:	Basics of Technical English
Level:	BA / BS / AD Program
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Semester:	Autumn 2026
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IMPORTANT NOTE

Assignments Last Date: 20-02-2027

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Question No. 1

Page design is an important element of technical communication. Discuss the major principles of effective page design and evaluate how layout, spacing, headings, and organization contribute to readability and communication effectiveness. (20 Marks)

Answer

1. The Strategic Role of Document Design

Page design in technical writing is a functional communication tool rather than mere visual decoration. Technical readers rarely read documents sequentially cover-to-cover; instead, they scan documents to extract specific operational data, safety instructions, or decision parameters. Effective document architecture organizes complex technical content into visually accessible structures that reduce cognitive reading effort.

2. Core Principles of Technical Page Design

1. Visual Grid and Page Layout Alignment

- *Grid Structure:* Establishing vertical and horizontal alignment lines ensures visual consistency across pages.
- *Margins:* Standard 0.75-inch to 1-inch margins frame the content, providing room for binding and visual breathing space.

2. White Space Management

- *Functional White Space:* Unprinted page areas direct the reader's eye, group related concepts, and isolate critical safety warnings.
- *Text Chunking:* Breaking lengthy passages into short paragraphs (3–5 lines) prevents visual fatigue.

3. Typographic Hierarchy and Style

- *Type Scale & Contrast:* Using proportional font sizes (e.g., Title 24pt, H1 16pt, H2 13pt, Body 11pt) signals structural importance.
- *Font Selection:* Pairing professional sans-serif fonts for headings (e.g., Arial, Helvetica) with readable body fonts (e.g., Calibri, Times New Roman).

4. Headings and Navigation Elements

- *Informative Headings:* Descriptive headers (e.g., “Step 3: Calibrate Thermal Sensor”) guide task execution better than generic labels (e.g., “Process”).
- *Headers, Footers, and Page Numbers:* Running headers and page numbering assist document navigation in multi-page manuals.

5. Visual Cues and Lists

- *Bulleted & Numbered Lists:* Converting long narrative lists into bullet points (for unordered items) or numbered lists (for sequential steps) enhances visual scanning.

3. Evaluation of Design Elements on Readability

Design Element	Operational Function	Impact on Document Usability
Headings Hierarchy	Creates a structural roadmap.	Enables rapid document scanning and task location.
White Space	Separates unrelated topics.	Reduces visual clutter and lowers reader cognitive fatigue.
Numbered Lists	Enforces operational sequence.	Minimizes missed procedure steps in technical execution.
Callout Boxes	Highlights critical warnings.	Isolates life-safety risks and key decision metrics.

Question No. 2

Technical documents often combine written explanations with graphical representations of data. Discuss the role of graphs, charts, and tables in technical communication and evaluate how effective visual presentation improves communication effectiveness and information retention. (20 Marks)

Answer

1. Functional Integration of Text and Graphics

Graphics in technical writing are essential tools for processing complex numerical relationships, system architecture, and spatial configurations. According to Allan Paivio's **Dual-Coding Theory**, human memory processes verbal and visual information through separate parallel channels. Combining well-designed graphics with precise technical prose doubles information retention and accelerates understanding.

2. Taxonomy of Technical Graphics

1. Tables (Exact Numerical Reference)

- *Function:* Best for presenting detailed, multi-variable numerical data when readers need exact numerical lookup.
- *Design Rules:* Align numbers right, text left; use explicit column headers and clear unit labels.

2. Line Graphs (Continuous Trend Analysis)

- *Function:* Illustrates continuous relationships over time or temperature (e.g., quarterly sales growth, pressure changes).
- *Design Rules:* Keep gridlines subtle; label axes clearly; limit to 3–4 comparison lines per graph.

3. Bar and Column Charts (Discrete Comparison)

- *Function:* Compares discrete quantities across distinct categories (e.g., regional energy consumption).
- *Design Rules:* Start baseline Y-axis at zero to avoid distorting proportions.

4. Pie Charts (Part-to-Whole Relationships)

- *Function:* Displays component percentages making up a 100% total.
- *Design Rules:* Limit to 5–7 slices; order slices largest to smallest starting at 12 o'clock.

3. Principles of Ethical Graphic Design

Misleading graphics destroy professional credibility. Technical communicators must ensure:

- Axes start at true zero baselines to prevent exaggerated visual slope distortions.
- Data scales remain uniform across comparative figures.
- All visual elements include explicit titles, callouts, and data source citations.

Question No. 3

A project manager regularly sends workplace instructions to employees through WhatsApp messages using informal abbreviations, incomplete information, and an inappropriate tone. As a result, employees misunderstand deadlines and assigned responsibilities. Discuss the professional communication principles that should be followed to improve clarity, professionalism, and communication effectiveness. (20 Marks)

Answer

1. Diagnosis of Communication Failure in the Scenario

The project manager's reliance on informal instant messaging for critical project instructions introduces four distinct communication breakdowns:

1. **Channel Misalignment:** Instant messaging platforms like WhatsApp are designed for brief informal check-ins, not binding task assignments or complex project specs.
2. **Linguistic Ambiguity:** Slang and informal abbreviations (*e.g.*, “*pls finish dis ASAP*”) leave deadlines and task parameters open to interpretation.
3. **Absence of Audit Trail:** Informal chat messages get buried under non-work conversations, preventing systematic tracking of responsibilities.
4. **Tone Breakdown:** Brusque, incomplete messages create reader frustration, damaging professional authority.

2. Application of Professional Communication Frameworks

To restore operational control, the project manager must implement three core frameworks:

A. The 7 Cs of Business Communication

- **Clarity:** Explicitly state the exact deliverable, responsible lead, and required submission format.
- **Completeness:** Provide all background context, technical dependencies, and resources.
- **Conciseness:** Express requirements efficiently without unnecessary conversational filler.
- **Concrete Deadlines:** Replace vague terms like “ASAP” or “by EOD” with explicit dates and times (*e.g.*, “*Friday, Oct 24, at 3:00 PM PST*”).

B. Task Assignment Matrix (RACI Framework)

Every assigned task instruction must specify:

- **R (Responsible):** The primary individual executing the task.
- **A (Accountable):** The decision-maker approving final output.
- **C (Consulted):** Technical subject matter experts providing input.
- **I (Informed):** Team members receiving status updates.

3. Standardized Task Directive Memorandum Template

Standardized Project Assignment Directive

TO: Development Team Leads

FROM: Project Manager

DATE: October 24, 2026

SUBJECT: Task Directive: Sprint 4 User Authentication Module Deployment

1. **Task Description:** Complete security patch calibration for the mobile login API.
2. **Assigned Lead (R):** Mr. Ali Raza (Senior Systems Engineer)
3. **Completion Deadline:** Wednesday, October 29, 2026, by 17:00 PST
4. **Deliverable Format:** Submit Git pull request link via project management portal (Jira).

Question No. 4

You are applying for a technical position in a software company and have been invited for an interview. Discuss the communication skills, interview practices, and professional behavior that should be followed to create a positive impression during the interview. (20 Marks)

Answer

1. Three-Phase Technical Interview Excellence Framework

Securing a technical role requires a balance of engineering proficiency, interpersonal communication, and professional conduct across three distinct interview phases:

Phase 1: Pre-Interview Preparation

- **Organizational & Technical Research:** Reviewing the employer's software stack, recent product releases, and corporate engineering culture.
- **Resume Alignment:** Ensuring thorough mastery over every project, programming language, and methodology listed on one's CV.
- **Virtual / Physical Setup Check:** Testing webcam, audio microphone quality, lighting, and dress code 24 hours prior.

Phase 2: Live Interview Execution

- **Verbal Communication & the STAR Method:** Structuring answers to behavioral and situational questions using the ****STAR Method****:
 - *S (Situation)*: Set the operational context briefly.
 - *T (Task)*: Describe the technical challenge or problem.
 - *A (Action)*: Detail the specific technical solution you implemented.
 - *R (Result)*: Quantify the outcome using empirical metrics (e.g., "reduced server latency by 28%").
- **Thinking Aloud During Technical Coding Steps:** Explaining logic step-by-step when solving live technical problems demonstrates problem-solving ability.
- **Non-Verbal Professional Demeanor:** Maintaining natural eye contact, active listening gestures, and confident posture.

Phase 3: Post-Interview Etiquette

- **Inquiring Thoughtful Questions:** Asking the interview panel about engineering sprint cycles, code review protocols, or team growth plans.
- **Professional Follow-Up Email:** Sending a concise thank-you email within 24 hours expressing appreciation and reconfirming enthusiasm for the role.

Question No. 5

You are part of a university research team preparing a technical report for an industry-sponsored project. Due to technical problems and incomplete survey responses, the report cannot be completed before the submission deadline next week, although most of the work has already been finished. Write a formal request letter to the project supervisor explaining the situation and requesting an extension for the submission date. **(20 Marks)**

Answer

Department of Computer Science & Software Engineering

Allama Iqbal Open University, Sector H-8, Islamabad

Date: October 24, 2026

To:

Dr. Muhammad Hammad

Senior Project Supervisor / Principal Investigator

Department of Computer Science, AIOU, Islamabad

SUBJECT: Request for Submission Date Extension: Industry Project Technical Report (Ref: #TR-2026-88)

Dear Respected Supervisor,

I am writing on behalf of the Smart Campus IoT Research Team to update you on the progress of our industry-sponsored technical report, titled *"Feasibility Analysis of Automated Edge-Computing Attendance Infrastructure."*

We are pleased to inform you that approximately **85% of the overall research and documentation has been successfully completed**, including the secondary literature review, system architecture design, and preliminary financial feasibility models.

However, during the final data validation phase this past week, our team encountered two unforeseen operational constraints:

1. **Hardware Server Calibration Delay:** A sudden electrical voltage surge on October 18 damaged two primary sensor calibration units, requiring emergency re-configuration by the vendor.
2. **Industry Survey Bottlenecks:** Several key industry partner departments experienced administrative audits, delaying the return of 45 remaining user feedback surveys needed for statistical validation.

To ensure that our final report delivers rigorous, complete, and uncompromised technical insights to our industry sponsor, we respectfully request a **10-day extension on the final submission deadline**, moving the due date from **October 30, 2026, to November 9, 2026**.

This additional time will allow us to incorporate the final validated survey data, complete statistical regressions, and finalize the print-ready documentation.

We sincerely appreciate your understanding, guidance, and continuous support. We look forward to your favorable response.

Yours sincerely,

Research Team Lead

Smart Campus IoT Project Team

Department of Computer Science, AIOU Islamabad

Contact: 03036940016 — Email: research@aiou.edu.pk