Shaikh Kamal IT Business Incubator
Chittagong University of Engineering & Technology (CUET)

diligite

Course Outline: Research Methodology and Technical Writing

Course by:

Sheikh Kamal IT Business Incubator, CUET
Chattogram-4349, Bangladesh.

Course Summary

No.	Subject	Comments
1	Course Duration	6.5 hours (1 day)
2	Course fee	BDT 2,000
3	Lab Facilities	SKITBI, CUET will provide.

Schedule

Friday/Saturday
Session-1: 10 am to 1 pm **Session-2: 2 pm to 5.30 pm**

Coordinator

Professor Dr. M. Moshiul Hoque
Professor, Dept of CSE, CUET
Director, Sheikh Kamal IT Business Incubator in CUET
Former Dean, Faculty of Electrical & Computer Engineering, CUET
Chair, IEEE Bangladesh Section

Trainers

Esteemed researchers of international standards will conduct this weekend's short course.

Learning Outcomes

By the end of this course, participants will:

- Understand research methodologies, proposal formulation, and dataset development.
- Proficiently use LATEX and Overleaf for structuring research papers and collaboration.
- Understand publication ethics, citation practices, and plagiarism avoidance

Course Modules

Module A: Research Methodologies (3 hr 20 min)

Introduction to Research Methodologies (20 min)

- Overview of qualitative and quantitative research methods
- The importance of a literature review in research
- Formulating research questions and hypotheses

Writing a Research Proposal (25 min)

- Introduction, motivation, goals/objectives
- Challenges, importance, and implications of the proposed research
- Environmental or societal impacts, and benefits in the national context
- Target group/population, standard process of conducting/writing a proposal

Literature Survey (10 min)

- Important terms or terminology
- Past advancements and current state of the research
- Drawbacks of past studies, research gaps, or questions
- Problem statement/formulation

Dataset Development Process (20 min)

- Dataset development techniques: manual and automatic
- Source selection, crawling, preprocessing, or noise removal
- Annotators or annotations and sample annotations, gold standard
- Final labeling, quality measure of annotations, dataset statistics and analysis
- Division of test, train, and validation sets, benchmarking

Methodology or Frameworks (25 min)

- Experimental-based: calibrations, tuning, optimization
- Data analysis based

Experimental Analysis (30 min)

- Participants, environments set up, parameter settings
- Experimental process/methods, evaluation measures
- Hypotheses testing & validation, analysis of results representation

Experimental Data Analysis Tools (30 min)

- SPSS, XL, Visio, WordCloud, Tableau, Visualization software
- Python scripts, R programming, simulation tools

Discussion (20 min)

- Focus on the findings, justification of outcomes
- Validation of hypotheses, in-depth or critical analysis of findings

How to Read a Research Paper (20 min)

- Skimming versus in-depth reading techniques
- Identifying the research problem, methods, findings, and implications
- Critical evaluation of research papers

Module B: Technical Writing Tools (3 hours)

Technical Writing Tools Overview (20 min)

- Word-processing software or tools
- LATEX: Why LATEX is popular for academic and scientific writing?
- Structure of a LATEX document, style files, bib file, text file, image/graphics
- Platform: compiler (Winedit), Overleaf

Hands-On LATEX in Overleaf (1 Hour)

- Setting up an Overleaf account and starting a new project
- Writing and formatting text including sections, lists, and tables
- Inserting citations and creating bibliographies in LATEX

Writing a Research Paper in LATEX (1 Hour)

- Structuring a research paper: title, abstract, introduction, methodology, results, discussion, conclusion
- Incorporating figures, tables, and equations in LATEX and their modifications
- Tips for efficient workflow in Overleaf

Revision, Collaboration, and Publication (20 min)

- Using Overleaf for collaboration: sharing projects and real-time editing
- Revising and commenting on drafts in Overleaf
- Preparing your document for submission: checking formatting guidelines and final touches

Publication Ethics (20 min)

- Publications ethics: why it matters, consequences of violation
- Ethical uses of previously published content, acknowledgment, citation, credit, permission of legal uses, copyright issues, conflict of interest
- Plagiarism: what it is, types of plagiarism, self-plagiarism, plagiarism checkers, how to avoid plagiarism

Frequently Asked Questions (FAQ)

Can I register for multiple courses?
-Yes, participants can register for multiple courses.

Will there be an overlap in class schedules for multiple courses
-There may be minimal overlap in class schedules, Please check the routine available at the notice board.

What are the available payment methods for online enrollment?
-Payment can be made via cash or online using the "Bkash to Bank" option.

Are there evening batches available for job holders?
-Yes, evening batches will be available. Please check the routine available on the notice board of the website.

Can I switch between online and offline classes?
-Online and offline classes are separate batches, and transfer depends on seat availability.

How will admission be confirmed?
-Admission will be confirmed upon payment; no separate admission exam will be conducted.

Will classes be conducted in locations other than the chosen one?
-No, classes will only be conducted at the chosen location, not in other cities.

What is the profile of the trainers?
-Faculty members will include both academic and industry experts.

What is the last date of enrollment?

-There is no last date of admission. After filling out the batches, enrollment will be closed.

Can I admit physically?
-Yes, Come to the third floor (Room no: 301,302) at the Multipurpose Building of Sheikh Kamal IT Business Incubator, CUET.

Will classes be held during Ramadan?
-Yes, they will.

Will a recorded version be available?
Yes, you will get lifetime access to the recorded version of the classes.