COURSE COMPACT

Course

Course code: GEC 324

Course title and credit unit: Technical Communication (2 Credits)

Course status: COMPULSORY

Course Duration

Two hours for 15 weeks (30hours)

Lecturer Data

Name of the lecturer: Engr. Elijah Aina ALHASSAN

Qualifications obtained: B.Sc, MSc, Regd. Engr. COREN, MNIAE, MISTRO, MASABE

Department: AGRIC. & BIOSYSTEMS ENGINEERING

College: SCIENCE AND ENGINEERING

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Office Location: Room A220, Second Floor New College Building

Consultation Hours: Tuesday (12- 2pm)

Course Content:

i. **Introduction to Communications:** Principles of effective communication in interpersonal and mass communication process. Verbal, Graphical and numerical communications.

ii. **Engineering Communication:** Attributes of communication and communicator, Barriers to effective communication

iii. **Written Communication:** Principles of Technical writing. Types of Technical writing, Styles, referencing and citation,Graphs; diagrams presentation. Statistical information presentation. Macro level and micro-level.

iv. **Oral communication**: Public speaking, Listening Attributes of an effective communicator, Public speaking skills, multi-media presentation skills. Facilitator and participant skills in meetings. Negotiating skills. Idea-generating skills. Speaking and presentation involving media and telecommunications

v. **Reading skills**: Effective reading skills: extracting main ideas and speed-reading, chunk/cluster-reading and word-attack techniques of technical reading materials. Equipment Manual Writing and Presentation: Component diagrams, assembling, description, and multi-language

presentation. Basic troubleshooting information, and technical support information. Marketing strategy.

Course Description:

This course would enable the students to have foundational knowledge of communication and specifically Technical or Engineering communication. Written and Oral communication, Styles in Technical writing, Types of Technical reports, Key elements of a technical report. Systems of Referencing and citation of sources, Graphs and diagrams presentation. Statistical information presentation. Macro level and micro-level, etc.

Course Justification

All disciplines have terms, modes of writing and communication commonly used by its professional, Technical or Engineering is not an exception to this rather general rule. The study of Communication and especially Technical communication is therefore an essential ingredient in the curriculum of all institutions, since the end point of all instructions is for the trainee to be able to transmit the acquired knowledge and skill to others either orally or in written form.

A thorough knowledge of the modes, skills required and the accepted format of presentation is essential. In Technical / Engineering education the modes of transmitting and presenting information are peculiar to the discipline. This course will involve the study of principles of effective communication, Oral and written, principles of Technical writing, types of Technical reports and the essential elements of a Technical report. Citations and Referencing would be emphasized to avoid plagiarism.

Course objectives

At the end of this course, students would be able to:

(i) Distinguish and recognize the methods of Communication.

(ii) Understand Engineering communication as an essential art in Technical education.

(iii) Understand Poor communication and barriers to effective communication.

(iv) Know the basic principles of effective Technical writing.

(v) Know the main types of Technical reports and the key elements of each type.

(vi) Understand citation, referencing and methods of representing sources etc.

Course Requirement:

The course requires that the students be familiar with the English language, library search, and internet search in his discipline. Oral and writing skills are advantages while involvement in basic communication in his discipline (i.e. attendance at seminars and conferences) is an additional advantage. Other requirement is that the students should have a good analytical mind.

Method of Grading-S/N Grading Score (%)

1. Tests 20%
2. Assignments 10%
3. Final Examination 70%

Total 100%

Course Delivery Strategies – Illustration below:

Lecturing is complimented with assignments in searching for materials in areas of specialization and critically assessing mode and format of presentation with a view to seeking the best method to adopt.

Assignments on titles of papers in journals (in student's discipline) and fashioning out keywords used in developing the write up.

Types of Technical reports, and the requirements in the preparation of each. Learning to identify the format and the key element required in each type of report.

LECTURE CONTENT

Week 1: Introduction to Communication

Objectives:

Students at the end of the week should be able to show an understanding of communication, viz: definitions, basic steps in communication, mechanisms for information transfer, and routes of transfer.

Week2: Introduction to Communication (cont'd).

Objectives:

Students at the end of the week should be able to know the Importance of communication, principles of effective communication, and tools for fault detection in communication.

Students should also be able to recognize the necessity of effective communication.

Study Question:

1. Give a detailed definition of Communication. Justify every item in your definition.
2. Oral communication a necessity in Engineering? Discuss.

Week 3: Engineering Communication I.

Objectives:

Students at the end of the week should be able to

- Define engineering Communication, its modes of delivery;
- Know the attributes of effective Technical **Communication**;
- Know the attributes of effective Technical **Communicator;**

Study Question:

1. Discuss in details the attributes of effective communication and its communicator. (cite examples from your experience)

Week 4: Engineering Communication II

Objectives:

Students at the end of the week should be able to

- Identify poor communication;
- Know the barriers to effective communication;
- Know the components and function of a communication model.

Study Question:

Choose an article from a major journal in your field of study. Evaluate the effectiveness of the article using the FIVE attributes discussed.

Week 5: Engineering Communication III

Objectives:

The students at the end of this week should be able to

i. understand the basic principles of effective Technical writing;
ii. Know the fundamental guiding principles of Technical writing.

Study Question:

List and discuss in details the guiding principles of technical writing stating clearly the pitfalls to avoid.

Week 6: Styles in Technical writing.

Objectives:

The students at the end of the lectures for the week should be able to

a) describe the component of at least one communication model.
b) Know the approach to Technical writing style ;

Study Question:

Distinguish between 'Formal' and 'Conversational' writing style. Give example of each.

Week 7: Main Elements of a Technical Report.

Types of Report I

Objectives:

Students at the end of this week should be able to understand the function and elements of the following reports:

1. Dissertation,
2. Journal articles/ Conference, seminar & workshop proceedings
3. Project proposals.

Week 8: MID SEMESTER EXAMINATION

Week 9: Types of Report II

Objectives:

Students at the end of this week should be able to understand the function and key elements of the following reports:

4. Feasibility reports
5. Design Reports
6. Tenders Reports

Study Question:

Discuss the relationship or linkage between the following reports stating the key elements.

Week 10: Types of Report III.

Objectives:

Students at the end of this week should be able to understand the function and key elements of the following reports:

7. Operation and Maintenance Manuals

8. Environmental Impact Assessment Reports
9. Environmental Audit.

Study Question:

Discuss the importance of an Operation and maintenance manual.

Week 11: Key Elements of Technical Report I.

Objectives:

The students at the end this week should be able to know in details the components of:

i) Introduction
ii) Literature Review and the
iii) Importance of Key words.

Assignment:

In your field of study, List 10 topics from your professional journal and write out the key words for each**.**

Week 12: Key Elements of Technical Report II.

Objectives:

The students at the end of this week should be able to know in details the components of:

iv) Methodology
v) Results and Discussions
vi) Conclusions and Recommendations
vii) Abstracts

Week 13: Oral communication and reading skills

Objectives

The students at the end this week, the students' knowledge should be vast in Public speaking skills, multi-media presentation skills. Facilitator and participant skills in meetings. Negotiating skills. Idea-generating skills. Speaking and presentation involving media and telecommunications.

Effective reading skills: extracting main ideas and speed-reading, chunk/cluster-reading and word-attack techniques of technical reading materials.

Equipment Manual Writing and Presentation: Component diagrams, assembling, description, and multi-language presentation. Basic troubleshooting information, and technical support information. Marketing strategy

Week 14: Systems of Referencing

Objectives:

The students at the end this week should be able to know the

- APA, MLA, CBE systems of referencing;
- Importance of citation.
- Citing of
    - Books or chapters in a book
    - Chapters in an edited volume
    - Journal articles
    - Articles in magazine
    - Articles in Electronic media etc.

Week 15: Revisions and test

Objectives:

Revise of all the topics and discuss unclear/ grey areas.

Reading List -

1. Ogedengbe, M. O, C.T. Akanbi, K.T. Oladepo, I.F. Adewumi (2005): Technical Report Writing. Faculty of Technology, Obafemi Awolowo University, Ile- Ife, Nigeria. 95pp.
2. Odigboh, E. U and C.C. Osuagwu (2003): Effective Communication of Technical Ideas in Science and Engineering. Top Quality Services, Energy Lab. Physics Dept. University of Nigeria, Nsukka. 374pp.