Course Type	Course Code	Name of Course	L	T	P	Credit
DC	NHSI500	Research and Technical Communication	3	0	0	3

Course Objective

This course allows research students to present credible and persuasive evidence and ideas to a variety of audiences. Research writing includes finding sources, evaluating their credibility, and smoothly integrating them into academic and non-academic texts. Students ultimately demonstrate the ability to make conscious decisions about style, genre, sources and citation style. The course assumes a basic understanding of Standard English grammar and mechanics, the conventions of academic writing (including basic use of sources and citations), the iterative process of writing, and competence in a variety of academic writing modes and genres. Academic texts will include a genre analysis, an audience analysis, and a literature review.

Learning Outcomes

Upon completion of this course, students will be able to:

- Analyze a topic of inquiry through scholarly research.
- Communicates findings of scholarly research through multiple genres of writing.
- Evaluate sources and uses summary, analysis, synthesis and integration to construct a literature review on a topic chosen by the student.
- Describe rationale for academic citation and applies different citation styles.
- Explores the same topic from different genres and compares the affordances of each.
- Explain stylistic choices and revises for style and consistency at the document, paragraph, and sentence levels.
- Present the research orally.

Unit No.	Topics to be Covered	Duration	Learning Outcome
1	**Introduction to Research Communication**	Week 1	Understanding what Research and Technical Communication is. Students will learn the relationship between research and technical communication and its importance.
2	**Introduction; principles of effective writing** Key principles of clutter free and effective writing. Cutting the clutter **Offline:** *Sentential and supra-sentential structure, Demo units and practice*	Week 2	Understanding the key principles of effective and clutter-free writing. Students will practice clutter-free writing with tips and tricks provided to them.
3	**Principles of effective writing (Verbs)** Voice and pronouns, A few grammar tips **Offline:** *Sentence formation; Common Errors in composition*	Week 3	Understanding the basics of writing, beginning with grammatical constructions. Students will learn to write in strong active voice and when and where to use inclusive pronouns. They will learn to look for common errors in composition and sentence formation and further employ the competence in writing.
4	**Crafting better sentences and paragraphs** Varying sentence structure to write strong paragraphs, use of dash, colon, parenthesis, etc., organization and concise writing, Paragraph editing.	Week 4	To introduce students to the general idea of Paragraph writing and Punctuation. Students will learn to craft paragraphs and edit them following the principles of paragraph writing.

	Offline: *Coherence and Cohesion; Enhancing editing skills; Punctuation; Demo units and practice*		
5	**Organization and streamlining the writing process** Pre-writing; Writing; Post-writing **Offline:** *Demo units and practice*	Week 5	Introducing the processes of pre-writing, writing and post-writing to students. Students will learn to plan and outline materials in the pre-writing stage, draft a document in the writing stage and finally edit the document in the post-writing stage.
6	**The format of an original manuscript** Format tables and figures, how to write results, introduction, methods and discussion sections, abstract, etc. **Offline:** *Demo units and practice*	Week 6	Introducing essential elements of an original manuscript. Students will learn to formulate abstracts, acknowledgements, figures and tables, appendix, etc. Students will integrate their learning of paragraph writing into the larger compositions while maintaining coherence, cohesion, clarity and consistency.
7	**Reviews, Issues in Scientific Writing** Focus on the peer review process, Writing a peer review; Plagiarism, Authorship, Ghostwriting, Reproducible Research **Offline:** *Demo units and practice*	Week 7-8	Introducing the process of peer reviewing a research paper. Students will learn to use classified and copyrighted materials to write a peer review. They will also learn to identify plagiarism and further employ the competence to craft plagiarism free write-ups.
8	**Commentaries, and Opinion Pieces, and the Publication Process,** Learn to write review articles, grants, letters of recommendation and personal essays. **Offline:** *Demo units and practice*	Week 9	Introduction to writing beyond research articles. Students will learn to write review articles, grants, letters of recommendation and essays.
9	**How to communicate with a broader audience (with the lay public)** Communicate with a broader audience; Learn to work with media; Interview and be interviewed; And write about science for general audience **Offline**: *Demo units and practice*	Week 10	Motivating students to communicate to a larger audience. Students will learn the skills required to work with media, provide interviews, interview fellow researchers. They will also learn to write about scientific research for the general audience.
10	**Offline:** **Revisiting paragraph writing; Types of Compositions** Summarization; Explanation; Analysis; Argument; etc. *Demo units and Practice*	Week 11-12	Revisiting paragraph writing and getting acquainted with different types of compositions. Students will learn to write summaries, analytical and argumentative compositions, etc.

11	**Offline:** **Presentation Skills** Outline; Key aspects; Organization; Highlighting; Inference. *Demo units and Practice*	Week 13	Preparing students for presentation of research work. Students will learn to present their research and learn to focus on and highlight specific elements of their presentation.
12	**Typesetting and Reference Management Software** Reference, Bibliography, Citations, etc. **Offline:** *Demo units and Practice*	Week 14	Introducing students to software handling. Students will learn to typeset. They will also learn to manage reference and citations through reference management software.
	TOTAL	14 Weeks	

Course Format and Expectations:
The course will be following hybrid model consisting of online materials, to be covered by self-study, and offline sessions.

- *Self-study*: Every week students will be assigned online lectures and readings. They will be covering this material on their own. There may be assignment questions each week.
- *Contact Session*: Every week there will be one offline session, where the students will be provided solutions to previous assignments and practice what was covered. These sessions along with faculty office-hours can be utilized for doubt clearing.

Course Resources:
Writing in the Sciences (Stanford University) through coursera.
[Link: https://www.coursera.org/learn/sciwrite]
[Note: Students will be required to enroll in this course in audit mode]

EVALUATION POLICY

- **Classwork/Assignment: 20%**
- **Mid-Semester: 32%**
- **End-Semester: 48%**

Recommended/Suggested Readings:

1. Ann Hogue (2008). *First Steps in Academic Writing*. Pearson.
2. Bailey, Stephen (2011). *Academic Writing: A Handbook for International Students*. Routledge.
3. Michael Harvey (2003). *The Nuts and Bolts of College Writing*. Hackett.
4. Rizvi, M.A (2005). *Effective Technical Communication*, New Delhi: Tata Mcgraw Hill.
5. Rowena Murray and Sarah Moore (2006). *The Handbook of Academic Writing*. McGraw Hill.
6. Schimel, Joshua (2012). *Writing Science: How to Write Papers That Get Cited and Proposals That Get Funded*. OUP: New York.
7. Schimel, Joshua (2012). Writing Science: How to Write Papers That Get Cited and
8. Proposals That Get Funded. OUP: New York.
9. Stephen Bailey (2003). *Academic Writing: A Practical Guide for Students*. Routledge.