

## Agricultural Extension in South Asia

## Writing in the Sciences

**Platform:** Coursera**Duration:** Self-paced (flexible deadlines)**Certification:** Yes, you have to pay (financial aid is available).

The "Writing in the Sciences" course offered by Stanford University on Coursera gives valuable insights into effective scientific communication. Over eight modules, Dr. Kristin Sainani, a professor at Stanford University and a science writer who is the instructor of this course, emphasises that good writing conveys ideas clearly and effectively rather than appearing overly sophisticated. She encourages students to focus on expressing their thoughts instead of worrying about sounding overly intelligent. Curated content based on guidelines from reputed publishers enhances credibility and aligns with industry standards. Dr. Sainani provides actionable tips for revising and organising work, clearly outlining the dos and don'ts of professional writing.

**Course Syllabus**

Week 1 - Introduction; principles of effective writing (cutting unnecessary clutter)

Week 2 - Principles of effective writing (verbs)

Week 3 - Crafting better sentences and paragraphs

Week 4 - Organization; and streamlining the writing process

Week 5 - The format of an original manuscript

Week 6 - Reviews, commentaries, and opinion pieces; and the publication process

Week 7 - Issues in scientific writing (plagiarism, authorship, ghostwriting, reproducible research)

Week 8 - How to do a peer review; and how to communicate with the lay public

By the end of the course, learners are expected to understand the principles of effective writing, including using strong active verbs, varying sentence structures, and creating strong paragraphs. They will learn how to simplify and organise the writing process and how to write the introduction, methods, results, and discussion sections of a scientific paper.

Additionally, students will explore the peer review process and ethical issues in scientific publishing, including how to avoid plagiarism, determine authorship, submit a paper, write a peer review, and avoid predatory journals. They will also learn how to write review papers, grant proposals, letters of recommendation, and personal essays. Lastly, the course will cover how to communicate science with the media, conduct interviews, and prepare for being interviewed.

Dr. Sainani emphasises the qualities that define effective writers, highlighting the importance of clear thinking and communication. By focusing on these areas, students can enhance their writing skills and grow more confident in their abilities.

"Writing in the Sciences" is a course aimed at improving scientific writing skills and providing insights into effective communication in the field of science. The course starts by covering the essential principles of effective writing, emphasising clarity, conciseness, and engaging prose. It highlights the importance of using active voice and strong verbs, discouraging the conversion of verbs into nouns, and ensuring that the subject and main verb are placed close to each other to improve readability.

The course emphasises sentence structure and the development of cohesive paragraphs. It offers thorough guidance on the use of punctuation marks such as dashes, colons, semicolons, and parentheses. Practical exercises encourage self-editing and enhance writing skills. These exercises focus on refining both sentence and paragraph construction, highlighting the importance of punctuation in producing clear and effective writing.

Participants will learn to set realistic writing goals and create polished tables and figures, ensuring these visuals are well-defined and easily accessible to readers. Ethical considerations, such as avoiding plagiarism, are also addressed, emphasising the importance of originality and the need to rely on one's understanding and research to produce authentic writing.

Additionally, the course covers various types of scientific writing, including literature reviews, grant proposals, and letters of recommendation, providing comprehensive strategies for each. It goes beyond academic writing by exploring how scientists can effectively communicate their work to broader audiences, including through media interviews and public writing. Key principles involve presenting risks transparently, avoiding misleading language, and fostering clear communication with journalists and the public to enhance the understanding of scientific topics.

In this course, most of the content is delivered asynchronously, allowing students to learn at their own pace through pre-recorded video lectures, readings, and assignments. Discussion forums are also available, where students can interact with instructors and peers, encouraging deeper engagement.

Transcripts of all video lectures and closed captions are examples of accessibility features that guarantee the course is inclusive. The information provided is of very high quality, with thoroughly researched and interesting content that is complemented with case studies from actual life. The resources offer various viewpoints on scientific writing, from scholarly publications to useful reports.

The grading system is transparent and fair. Quizzes require a passing grade of 80%, and assignments are evaluated based on depth of understanding and application of the discussed concepts. A minimum of 80% in all activities is required for certification. For students seeking honours, an optional assignment and quiz demand advanced cognitive skills, applying the course's competencies.

Dr. Sainani's teaching style is interactive and encourages reflection, even in an asynchronous format. She has a PhD in epidemiology and a master's degree in statistics. She has taught statistics and writing at Stanford for more than a decade.

Our motivation for enrolling in this course stemmed from our desire to improve our ability to communicate research findings effectively. The course's emphasis on academic writing made the learning process both enjoyable and enriching.

One may think, “Why should postgraduate students in India enrol in this course when the ICAR PG course titled ‘Technical Writing and Communication Skills (0+1)’ is already offered at all agricultural universities? The answer lies in the course’s delivery. Instructors of the existing technical writing course might consider adopting instructional approaches from this course, thereby helping their students become more effective science communicators.

In conclusion, this course is an excellent choice for anyone seeking to grasp the nuances of effective scientific writing. While it is easy to believe that completing a thesis or publishing an article qualifies our writing as professional, this course demonstrates that there is always room for improvement. It teaches us how to refine our work and differentiate ourselves by mastering the finer details that significantly enhance our professionalism.



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