

# INDIAN INSTITUTE OF TECHNOLOGY GANDHINAGAR

## NORMS FOR CERTIFICATION IN SCIENTIFIC WRITING

(As approved by the Senate in its 44<sup>th</sup> meeting held on 08 July 2020)

Exceptional research programs all over the world have integrated training and certification in scientific writing in their institutional framework. A significant number of Master's and Doctoral students at the Indian Institute of Technology Gandhinagar (IITGN) have limited experience in communicating research. In most cases, the first conference poster or journal paper that emerges from a research scholar's work at IITGN is also their first successful scientific communication.

This certification in Scientific Writing is expected to:

- Encourage research scholars to work on scientific writing from an early stage in their tenure
- Serve as a milestone for measuring student progress
- Facilitate emergence of tutors in scientific writing
- Contribute to skill building of IITGN students
- Enable students to use scientific writing competencies during their life-long learning process.

Certification in Scientific Writing is *not* a training program. Its main goals are to gauge students' skills and knowledge in scientific writing and to promote skill development.

The following norms are approved for the process:

(1) Doctoral students are eligible to apply for the certification. The certification is especially relevant for scholars who are planning to present their research in international conferences abroad or are drafting their first communique. IITGN students can obtain certification at no cost.

(2) The certification process will be conducted twice every year to ensure a manageable number of applicants in each round; suggested timings are during Jan-Mar and Aug-Oct.

(3) Applicants will be required to undergo two phases:

- **Phase I: Submission of two (2) written works:** 1) a poster (mandatory) and 2) a scientific article of their work (e.g., a manuscript or a proposal). Both written submissions should be the students' original works without any revisions done by their faculty advisors. To assess the students' written works,

faculty in their respective disciplines and their research advisors may be involved. Written submissions will be assessed on the basis of logical coherence, ability to convey complex ideas, grammar, and language skills. Computer-based plagiarism checking systems will be employed during grading.

- **Phase II:** Undertake a **written examination** that will test the applicant's awareness of the principles of scientific writing (e.g., clarity, preciseness, coherence, and logical order), information paraphrasing, quotation and summarization, academic integrity and ethics, plagiarism, make an argument and structure of academic works. It will also test their ability to visualize and interpret data.

(4) The Institute Library and the Writing Studio are expected to provide resources and support in training applicants on the various aspects of Scientific Writing, including but not limited to on-campus workshops and training sessions, access to journal articles, webpages, and videos, and access to visiting resource personnel. A database with content on the different topics of Scientific Writing should be created. For example, a dedicated website on Scientific Writing can be created to pool content from different resources.

(5) **Phase I assessment of written submissions** will follow a grading matrix that reviews multiple parameters. The grading matrix is as follows:

Assessment	Grade	Sample Parameters
Good (fulfills certification expectations and exceeds in certain aspects)	3	<ul style="list-style-type: none"> <li>• Context and purpose are conveyed clearly</li> <li>• Reaches out to audience to a reasonable extent</li> <li>• Logical and clean organization</li> <li>• Perfect or nearly perfect grammar, spelling and punctuation.</li> <li>• Vocabulary usage is good</li> </ul>
Certifiable (fulfills certification expectations)	2	<ul style="list-style-type: none"> <li>• Adequately covers context but does not anticipate audience needs</li> <li>• Develops subject material well</li> <li>• Overall organization is logical with scope of improvement</li> <li>• Vocabulary is adequate with scope for improvement</li> <li>• Minor issues with grammar and/or punctuation</li> </ul>

Inadequate (may fulfill certain parameters; overall falls short of certification expectations: requires significant work to reach certification expectations)	1	<ul style="list-style-type: none"> <li>• Purpose is not readily apparent though some context is provided</li> <li>• Unable to reach out to the expected audience</li> <li>• Superficial treatment of subject matter</li> <li>• Organization is weak; transitions are weak and often illogical</li> <li>• Significant problems with grammar, spelling and punctuation; adherence to standard scientific norms is not consistent</li> </ul>
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(6) Candidates will be required to achieve an overall Grade of 2 (Certifiable) or better in their written submissions (Phase I) to be permitted to appear for the written examination (Phase II).

(7) **Phase II assessment of the written examination** will follow a grading matrix that reviews multiple parameters. The grading matrix is as follows:

Assessment	Grade	Sample Parameters
Good (fulfills certification expectations and exceeds in certain aspects)	3	<ul style="list-style-type: none"> <li>• Logical and clean organization</li> <li>• Perfect or nearly perfect grammar, spelling and punctuation</li> <li>• Vocabulary usage is good</li> <li>• Good knowledge and skills about concepts in scientific writing</li> </ul>
Certifiable (fulfills certification expectations)	2	<ul style="list-style-type: none"> <li>• Overall organization is logical with scope of improvement</li> <li>• Vocabulary is adequate with scope for improvement</li> <li>• Minor issues with grammar and/or punctuation</li> <li>• Satisfactory knowledge and skills about concepts in scientific writing</li> </ul>
Inadequate (may fulfill certain parameters; overall falls short of certification expectations)	1	<ul style="list-style-type: none"> <li>• Superficial treatment of subject matter</li> <li>• Organization is weak; transitions are weak and often illogical</li> <li>• Significant problems with grammar, spelling and punctuation; adherence to standard scientific norms is not consistent</li> <li>• Deficient knowledge and skills about concepts in scientific writing</li> </ul>

(8) Participants who perform satisfactorily (Grade 2 and above) in both Phase I and Phase II will be awarded the certification. Students who achieve certification have been identified as having the basic necessary knowledge and skills in Scientific Writing with scope for improvement.

(9) The certification process shall be managed by a Coordinator who will decide on the following aspects of the process:

- a) Announcement of the process.
- b) Identification of and coordination with faculty and staff who will assist in the implementation and assessment of written submissions and examinations.
- c) Coordination with the Institute Library and the Writing Studio on available resource materials.
- d) Suggestion of remedial measures to the participants who are unable to pass the certification process and may or may not be interested in appearing again.

(10) Financial support given to Ph.D. students for 1) overseas conferences (up to Rs. 2 lakh) and 2) doing research in a foreign lab (up to \$12500) will be contingent on students clearing the scientific writing certification. In exceptional cases, this requirement may be waived if a student cannot obtain the certification but can demonstrate enough evidence of having made an attempt to learn and improve his/her scientific writing capabilities. Waivers may be given by the Director upon recommendation of the Dean, Academic Affairs.