Writing 109ST: Writing for Science and Technology

### Prequisites: Writing 2, 2LK, 2E, or equivalent; upper-division standing or consent of instructor. Not open for credit to students who have completed English 109A.

### Catalog Description: Analysis and practice of various forms of scientific and technical writing, both academic and professional, such as reports, proposals, journal articles, and abstracts. Attention to research methods, design of papers, development of graphics, technical style, and editing strategies.

### Course Description: Writing 109ST is designed to increase students’ ability to communicate scientific and technical information in a variety of genres and for multiple purposes and audiences. Writing 109ST immerses students in the research process in order to give them an insider’s view of the role of writing in the formation of knowledge in disciplinary terms. To this end, students will read and critique secondary literature, conduct library research, propose and/or conduct primary research, and learn the formal conventions of different genres of writing in the sciences and engineering.

Learning occurs through active engagement through direct instruction and student activities, individually or collaboratively and may address such subjects as: the genre conventions of research-based writings in science and technology; primary texts and secondary literature; graphics and document design; collaborative writing; oral presentation; and research methods and ethics.

**Curricular Premises:** Writing 109ST addresses the writing conventions of science and engineering, and as such, it is aligned with Writing 109SS and Writing 109HU, which address the other major divisions of the academic research disciplines. Although most students who take Writing 109ST are mathematical, physical, life science, or engineering majors, other upper-division students willing to engage in academic research related to the scientific and engineering disciplines may also benefit from the course. The major objective in Writing 109ST is to help students understand the forms and functions of various genres used to record and advance the work of scientific research. Students are encouraged to relate the work they do in Writing 109ST to their evolving knowledge in their own disciplines. The course teaches students to represent knowledge effectively in the variety of forms of communication used by academic practitioners in their fields.

### Course Requirements:

**Texts:** Readings should help students develop awareness of the purpose of scientific research and how its research questions, research design, distinct writing styles and genres are suited to particular audiences and rhetorical situations. Issues addressed in readings include the development of research questions within appropriate disciplinary paradigms and ongoing research programs; the relationship of research methods and the knowledge claims of a field; the role of secondary literature in research; ethical considerations of scientific research and writing; the role of social science research in shaping public policy and social action; the media's use of scientific research and, of course, the relationship of all these issues to the conventions of scientific writing.

**Assignments:** Informal and formal writing assignments allow students to analyze and critique previous theory and research, summarize research findings and research articles, describe and interpret primary research methods and data, and argue research claims. Common genres to which students are exposed through reading or writing assignments include memos, letters, electronic mail, proposals, progress reports, reports, journal articles, instructions and procedures, documentation, and CV/resumes. Students do a major research-based writing project (often a formal literature review, research report, or research proposal) and locate and read a significant number of research articles for the final project. Students present some aspect of their work orally, and they learn discipline appropriate presentation forms including the use of graphics. Proposal writing in this course should address proposed research and not constitute business proposals or plans.

**Outcomes:**

* Recognize and analyze discipline-specific formats and organizational strategies
* Understand specialized terminology of the discipline or field
* Understand how evidence is typically used in the field to support theories or arguments
* Access secondary source materials using a range of resources, including specialized professional journals and databases, websites, and popular literature
* Be aware of the differences between primary and secondary research
* Conduct a significant independent research project
* Cite and document sources in a manner appropriate for the field
* Produce a series of shorter texts that demonstrate typical content, formats, and stylistic conventions of the field
* Refine and develop a mature style of writing appropriate for the field
* Tailor writing to meet the requirements of lay, professional, or specialized audiences
* Translate complex writing into clear, concise language.