Technical Writing 2
Course Syllabus

Course Description

In this course, students will develop the scientific and technical reading and writing skills they need to understand and construct research articles. The course will be divided into two parts.

In Part One of the course, students will learn the principles of writing research papers in science and engineering. First, they will learn what research is, and how the process of research is revealed in the structure of research papers. Next, they will look at software tools and corpora (collections of language samples) that can assist them in the writing of research papers. At the end of the section, students will create their own corpus of research papers and will use throughout the remainder of the course.

In Part Two of the course, students will write a full research paper in their field of specialization, working separately on the title, abstract, introduction, materials/methods, results, and discussion in each unit. For each part of the research paper, students will first analyze the sample texts in their corpus and then present their findings to other members of the class. This will help all students to understand which elements are common to all science and engineering disciplines, and which are unique to individual disciplines. Next, they will apply what they have learned in their own writing, slowly constructing a full-research paper by the end of the course.

Course Goals

- Understand the importance of English in the fields of science and engineering.
- Understand common problems associated with using technical vocabulary in specialist fields.
- Use effective strategies to learn technical vocabulary in specialist fields.
- Use text analysis tools to identify differences in the audience, purpose, structure, style, and presentation of technical texts in different fields.
- Identify the structure of technical research papers in specialist fields.
- Understand research journal *Call for Papers* and *Instructions for Authors*.
- Write the title, abstract, introduction, materials/methods, results, discussion/conclusion sections of a research paper in a specialist field.
- Write simple and extended definitions.
- Explain methods and processes.
- Explain information in figures and tables.
- Know how to strengthen or weaken the interpretation of research findings through hedging.
- Understand the importance of references, citations, and avoidance of plagiarism.
- Follow common conventions for citing and referencing information in a research article.

Textbook and Materials

Course materials will be distributed in the first lesson of the course.

Grading

Student evaluations will be based on a series of written reports, class participation, and an end of term report.

Course Schedule

Lesson 1	Introduction to Technical Writing Review of Technical Writing 1: What is research/How do you structure a research paper
Lesson 2	Basic Principles in Technical Writing: Audience, Purpose, Organization, Flow, Style, Presentation
Lesson 3	Introduction to text analysis tools (1): analyzing research paper biographies-part 1
Lesson 4	Introduction to text analysis tools (2): analyzing research paper biographies-part 2
Lesson 5	First steps in text analysis (1): building a corpus of research papers
Lesson 6	First steps in text analysis (2): creating vocabulary lists, searching for words, phrases, and grammar patterns
Lesson 7	Writing a research paper proposal: brainstorming topics, narrowing the scope, finalizing the decision
Lesson 8	Writing a research paper title: keywords, noun phrases, and prepositions
Lesson 9	Writing a research paper introduction (1): characteristic features and structure of introductions
Lesson 10	Writing a research paper introduction (2): explaining the situation, describing problems/limitations, describing the response
Lesson 11	Writing a research paper methods section: explaining methods and processes
Lesson 12	Writing a research paper results section: deciding the type of visual aid, explaining figures and tables
Lesson 13	Writing a research paper discussion/conclusion section: summarizing results, adjusting the strength of interpretations using hedging
Lesson 14	Writing a research paper abstract: choosing between indicative and informative abstracts
Lesson 15	Wrap-up: Summary of course Final report submission details

Other

1. Students are expected to attend each class, and actively participate in group and class discussions. Students will also be required to complete all homework exercises, and submit an extended report at the end of the semester.

2. Bringing an advanced English/Japanese dictionary to class is recommended.

3. Students should bring a sample of their writing from a previous course (e.g. TW 1) to the first class if available.

End-of-Term Paper Grading Rubric

Grade	Details

A+	Overall> Shows fluency in both language use and ideas.
	• Mechanics
	  ➢ Follows the journal template (headings/presentation/layout)
	  ➢ Spell and grammar checked
	• Citation/References
	  ➢ Cites all sources and references these correctly
	  ➢ Uses all appropriate and high level sources (at least one journal article)
	• Paragraphs
	  ➢ Writes in paragraphs of over 3 sentences
	  ➢ Paragraphs include topic sentences
	  ➢ Paragraphs are linked with logical connectors
	• Style
	  ➢ Shows good understanding of formal academic writing style (correct verb usage, no run on expressions, no slang, preciseness, no contractions, limited use of "I" "You", no direct questions)
	• Grammar
	  ➢ Shows good understanding of tense/voice usage in different sections of a paper
	  ➢ Complex sentence structure is used
	  ➢ Discussions are hedged
	  ➢ Shows good understanding of article usage
	• Organization
	  ➢ Titles: detailed and structured correctly
	  ➢ Introduction: discusses background/past research and the problems (with citations)
	  ➢ Methods: written in correct tense/voice; procedure is clear, search engines and sources or materials and procedures described
	  ➢ Results: describes main points in figures/tables
	  ➢ Discussion: discusses results with correct hedging

A	Overall> Very well written paper with clear ideas and clear language but with minor errors.
	• Mechanics
	  ➢ Follows the journal template with only minor errors
	  ➢ Spell and grammar checked but there may be minor mistakes
	• Citation/References
	  ➢ Sources are cited and referenced correctly
	• Paragraphs
	  ➢ Writes in paragraphs of over three sentences
	  ➢ Paragraphs include topic sentences
	  ➢ Sentences are usually connected but there may be minor errors in logical connectors
	• Style
	  ➢ Shows an understanding of formal academic writing style but there are minor mistakes
	• Grammar
	  ➢ Shows understanding of tense/voice usage
	  ➢ Correct sentence structure is used; little or no awkward phrasing is seen
	  ➢ Hedging is used
	  ➢ Shows an understanding of article usage but minor mistakes exist
	• Organization
	  ➢ Titles: detailed and structured correctly; some minor mistakes may exist
	  ➢ Introduction: discusses background/past research and the problems (with citations); some minor mistakes may exist
	  ➢ Methods: written in correct tense/voice; some minor mistakes may exist; procedure is clear, search engines and sources or materials and procedure described
	  ➢ Results: describes main points in figures/tables; some minor mistakes may exist
	  ➢ Discussion: discusses results with correct hedging; some minor mistakes may exist

B	Overall> Macro issues (purpose, organization, paragraph structure) are all strong but micro issues (grammar, sentence structure) may be problematic.
	• Mechanics
	  ➢ Follows the journal template with some errors
	  ➢ Various spelling and grammar mistakes are noticeable but overall meaning is clear
	• Citation/References
	  ➢ Most sources are correctly cited and referenced but may show problematic formatting
	
	• Paragraphs
	  ➢ Most paragraphs are at least three sentences long
	  ➢ Most paragraphs have good topic sentences
	  ➢ Many sentences are disjointed or use a very limited number of logical connectors

	- Style
	    ➢ Attempts to write in formal academic writing style but problems remain (logical connectors, no contractions, no run-on expressions, limited use of "I" "You", no direct questions)
	- Grammar
	    ➢ Tense/voice problems are evident but sentence meaning is clear
	    ➢ Basic sentence structure is good but there is some awkward phrasing
	    ➢ Hedging is weak
	    ➢ Various article mistakes are noticed
	- Organization
	    ➢ Titles: some structure links and/or content are not appropriate
	    ➢ Introduction: limited discussion of background/past research with little citation making the section unconvincing
	    ➢ Methods: mistakes in tense/voice and several steps are not clear; procedure is mostly clear, search engines and sources are basically described
	    ➢ Results: limited use of figures/tables with only brief explanation
	    ➢ Discussion: discusses results in simple fashion with little hedging

C	Overall> Problems exist with macro issues and poor sentence construction make meaning difficult to follow; however, the paper shows evidence of understanding of the material presented in class
	- Mechanics
	    ➢ The template is largely ignored
	    ➢ Various spelling and grammar mistakes are noticeable and overall meaning is not always clear
	- Citation/References
	    ➢ Citation and/or referencing are very limited or problematic.
	- Paragraphs
	    ➢ Paragraphs are less than three sentences long.
	    ➢ Topic sentences are often missing
	    ➢ Few or no logical connectors are used
	- Style
	    ➢ Little attempt to write in a formal academic writing style (logical connectors, no contractions, no run-on expressions, limited use of "I" "You", no direct questions)
	- Grammar
	    ➢ Tense problems are clear
	    ➢ Hedging is very weak or non-existent
	    ➢ Many article mistakes are apparent
	- Organization
	    ➢ Titles: overly simple and some structure links and/or content are not appropriate
	    ➢ Introduction: limited discussion of background/past research with little citation making the section unconvincing
	    ➢ Methods: mistakes in tense/voice and several steps are not clear
	    ➢ Results: limited use of figures/tables with only brief explanation
	    ➢ Discussion: discusses results in simple fashion with no hedging

F	Overall> Paper does not demonstrate an understanding of macro issues, and significant micro errors make understanding difficult. - The final report is not submitted or outline was not approved - The final report shows evidence of plagiarism (more than 20% with no evidence of an attempt to paraphrase and cite when using original or translated sentences) - The final report does not match the content of the in-class project - Mechanics - the template is ignored and the overall meaning is not clear - Citation/References are missing completely - Paragraphs - are less than three sentences long and topic sentences are missing - Style - No attempt to write in a formal academic writing style - Grammar - Tense problems are clear. Hedging is non-existent. Most sentences contain article mistakes