




Engineering Excellence in Technical Writing: The Case for Complete Program Redesign

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Outline




- Overview of Center for English Language Education in Science and Engineering (CELESE)
- A Brief History of English Programs at Waseda University, Faculty of Science and Engineering
 - Pre-2004 → (2004 - 2006) → 2007
- CELESE Technical Writing Program
 - assumed knowledge / course goals
 - materials / classroom procedures
 - sample student writing
 - student feedback

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


Overview of CELESE




- Center for English Language Education in Science and Engineering (CELESE)
 - Founded: April, 2004
 - Members: 6 tenured faculty / 2 visiting lectures
 - Students: all undergraduates and graduates in the Faculty of Science and Engineering
 - Mission: carry out research, and design and administer English courses specifically for science and engineering students

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A Brief History of English Programs in Sci. & Eng.




~2003	Old Curriculum English I, English II, Advanced English, English Forum
2004 ~ 2006	Transition Curriculum (FS) English I, English II, Advanced English, English Forum
2007 ~	New Curriculum Communication Strategies 1/2 Academic Lecture Comprehension 1/2 Academic Reading 1/2 Concept Building and Discussion 1/2 Technical Writing, Technical Presentation Special Topics in Functional English

■ Required courses

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Overview of CELESE English Program




~2003	Old Curriculum English I, English II, Advanced English, English Forum
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- Features of English I
 - in-class text chosen by teacher
 - self-study materials chosen by English faculty
 - standardized testing of self-study materials
 - grading determined TOEFL
- Features of other courses
 - all aspects of course decided by course teacher

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Overview of CELESE English Program



2004 ~ 2006	Transition Curriculum (FS) English I, English II, Advanced English, English Forum
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- Features of English I (FS), English II (FS)
 - in-class text and self-study materials chosen by CELESE
 - standardized testing of all study materials
 - grading determined from in-class (teacher) grade, standardized test grade, TOEFL
 - streaming of students according to TOEFL
- Features of other courses
 - all aspects of course decided by course teacher

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Overview of CELESE English Program




2007 ~	New Curriculum Communication Strategies 1/2 Academic Lecture Comprehension 1/2 Academic Reading 1/2 Concept Building and Discussion 1/2 Technical Writing, Technical Presentation Special Topics in Functional English
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- Features of new curriculum
 - all courses are designed by CELESE faculty
 - all courses are carefully integrated into an overall English language program for scientists and engineers
 - all courses are based on established theories of language learning
 - all course teaching is subject to peer review

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Overview of CELESE English Program




2007 ~	New Curriculum Communication Strategies 1/2 Academic Lecture Comprehension 1/2 Academic Reading 1/2 Concept Building and Discussion 1/2 Technical Writing, Technical Presentation Special Topics in Functional English
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- Features of new curriculum
 - all students are initially streamed based on a placement TOEIC score
 - final class grades are determined using in-class (teacher) grades and standardized test grades (including TOEIC)
 - all in-class texts and self-study materials are either selected or created by CELESE faculty
 - all classes are conducted only in English

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Overview of CELESE English Program



4th	Academic Course Communication Course	Technical Writing 1/2 Technical Presentation
3rd		Special Topics in Functional English
2nd	Academic Reading 1/2 Concept Building and Discussion 1/2	Required Courses for All Students
1st	Academic Lecture Comprehension 1/2 Communication Strategies 1/2	


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Technical Writing 1/2

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Technical Writing 1/2



- Assumed Knowledge (acquired in earlier courses)
 - research skills
 - developing a research proposal, finding information through library and web searches, ethics in writing (plagiarism and how to avoid it), references/citation
 - writing skills
 - basic sentence/paragraph writing
 - 500 word summary of academic lectures (chronology, definitions, process, ...)
 - basic three-five paragraph essay
 - short word research based report
 - vocabulary
 - most frequent 2000 words of English (JACET 2000)
 - academic word list (Coxhead, 2000)


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Technical Writing 1/2



- Course Goals
 - learn how to identify and adopt the writing conventions of the target field
 - research paper title, abstract, introduction, methods, results, discussion, citations, references
 - simple/extended definitions, explanations of tables/graphs, biographic data, email, ...
 - develop strategies for acquisition of technical vocabulary
 - utilize text analysis tools in the analysis and writing of research articles and other technical documents
 - corpus linguistics in the classroom


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Technical Writing 1/2

- Materials / Classroom Procedures
 - Stage 1: Understanding audience, purpose, organization, style, presentation
 - authentic materials selected from native English high school/university textbooks, letters of acceptance/rejection, ...
 - Stage 2: Applying Stage 1 skills to the target language
 - scientific/engineering magazine articles (IEEE)
 - student centered analysis of target journals
 - Stage 3: Writing for publication
 - student centered writing of research paper title, abstract, introduction, methods, results, discussion

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Technical Writing 1/2


- Sample Writing (First class of Technical Writing 1)
 - 4th year student abstract

Title: The Structure of Ancient Architecture

Outline:

I would like to research dynamic properties of ancient architecture. One laboratory, which I would like to belong to, researches collapsing process for heritage structures of Angkor. Such research is helpful to preserve heritage structures, and also it can suggest how to extend the life of architecture. I think. (50).

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Technical Writing 1/2

- Sample Writing (Final class of Technical Writing 1)
 - 4th year student abstract

The Structure of Ancient Architecture


Department of Architecture, Waseda University

Keywords: structure; ancient architecture; influence; purpose

Abstract:

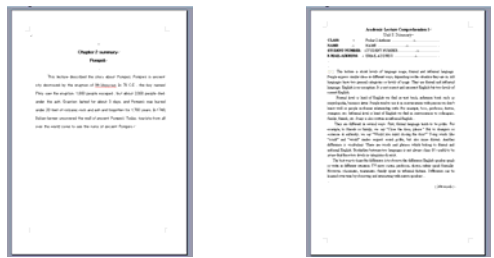
The ancient architecture is fascinating to a lot of people. Many people surely visit the ancient architecture when they travel somewhere. They look at the detail of architecture carefully to confirm if what the guidebook says is right or not. However, not only the detail, but also the structure is also important. The structure of ancient architecture, as well as design of that, is showing history. For Example, Parthenon has wooden structure, although it is made of stone. That indicates that there used to be a large amount of wood in Greece and they had constructed wooden houses. When they began to use stone, only the form of the structure has remained. This paper first treats how the climate and landform of regions influenced the structure of ancient architecture. Then, how the form of the structure spread between regions is discussed. It relates to trade, war, and religion. Finally, what structure should be chosen to conform to the purpose of architecture in present days is highlighted. The structure of architecture has a lot of history. It means that every structure has meaning in present days. We should choose structures properly when design architecture to adjust to use, users, place and times. (201).

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Technical Writing 1/2

- Sample Writing
 - 1st year student writing at start and end of Academic Lecture Comprehension 1




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Student Feedback on Technical Writing 1

- "I could study the basis of reading and writing. It helped me very much for both searching related works and writing papers. The strategy was useful in English and even in Japanese!"
- "We could learn how to write technical report. We do not have time to learn that even if Japanese, it was very useful. Thank you."
- "Your advice in this class has really changed my thinking about English."
- "Your lecture was very interesting. I think that writing skill especially improved thanks to your lecture."

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Summary and Conclusions

- Engineering a technical writing program involves:
 - 1) Considering the needs of students and the goals of an integrated set of courses
 - 2) Determining what classroom materials, teaching procedures, and testing procedures can be used to attain the goals
 - 3) Working within the constraints of the program in terms of human resources, technical resources, student ability, university policy
 - 4) Negotiating with specialist faculty and the university to reduce the number of constraints by addressing issues of scheduling, class hours, teaching loads, ...
 - 5) Establishing a program of teacher training for both full-time and part-time faculty
 - 6) Understanding that no program is perfect from the start, and that it requires regular assessment and adjustments

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