

Gribben

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Syllabus for E--, Writing in Different Disciplines,  
Writing in Natural Sciences and Technology

Texts: Bowen, Mary Elizabeth, and Joseph A. Mazzeo,  
Writing about Science (New York: Oxford, 1979).  
Kuhn, Thomas, The Structure of Scientific Revolutions  
(Chicago: Univ. Chicago Press, 1962).  
Mills, Gordon H., and John A. Walter, Technical Writing, 4th ed.  
(New York: Holt, 1978).

UNIT I: THE AIMS, OR PURPOSES, OF WRITING IN  
THE SCIENCES AND TECHNOLOGIES

A. Objectives

1. Ascertain status of the class by an early piece of writing (see suggestions below).
2. Enable students to recognize the primary aim of writing in their fields as to refer to entities and events "in" the world outside the writer, the reader, and the writing.
3. Establish the notion of several subordinate aims of referential writing in students' fields (e.g., in Kinneavy's terms to inform, to demonstrate, or prove, or to speculate).
4. Enable students to recognize different audiences for writing in their fields and the general effects of such differences on the writing.
5. Review basic <sup>sentence</sup> problems, e.g. fragment, comma splice, run-on, subject verb disagreement, dangling modifier; and consider the problem of specialized vocabulary, sometimes called "jargon."

- B. Texts Mills & Walter, Ch. 1, "Introduction"  
Ch. 19, "Writing for Professional Journals"  
Appendix E, pp. 539-563, "The Final Draft of the Galt Report"  
Ch. 3, Part I, "Reader Adaptations," pp. 17-29;  
and "Jargon" pp. 43-44.

Bowen and Mazzeo,

C. Theoretical and Critical Readings (for teachers)

Jakobson, Roman, "Linguistics and Poetics"  
Kinneavy, James, A Theory of Discourse, Chs. 2 and 3.

D. Suggestions for Writing and Class Discussions

1. Students write a short passage which they regard as typical of writing in their fields.
2. Students collect and bring in examples of writing which they regard as typical of their fields.

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UNIT II: THE SOURCES OF THE ENTITIES AND EVENTS THAT  
DIFFERENT SCIENCES AND TECHNOLOGIES WRITE ABOUT

## A. Objectives

1. Enable students to recognize the abstraction from phenomenal reality that all non-transcendent knowledge about the world involves.
2. Enable students to recognize the kinds of abstraction typical of their fields and of other scholarly fields and, consequently, the dependence of all of these fields on languages, such as English, mathematics, computer languages, etc., in which signs stand for the abstractions we have made.
3. Increase students' awareness of the philosophical, historical, and social sources of the abstractions in their fields.
4. Increase students' ability to think critically and creatively about the paradigms in their fields--that is, the models according to which abstractions are made.

B. Texts: Kuhn, The Structure of Scientific Revolutions

Bowen and Mazzeo,

## C. Theoretical and Critical Readings (for teachers)

- Barthes, Roland, "Historical Discourse"  
 ^ "Science versus Literature"  
 Geertz, Clifford, The Interpretation of Cultures, Ch.1  
 Hayakawa, S. I., Language in Thought and Action, p.  
 Landes, David, The Unbound Prometheus: Technological Change 1750 to the Present, Ch.1.  
 Moffett, James, Teaching the Universe of Discourse, Ch. (on abstracting).  
 Morris, Charles, Foundations of Sign Theory, Ch. 1

## D. Suggestions for Writing and/or Class Discussions

1. Students analyze the categories of entity and event i.e., the construction language makes of "reality" in different pieces of writing in their fields and other fields. (Cf. "Historical Discourse").
  2. Students identify what Kuhn calls the paradigms of several pieces of writing.
- B. Students describe the general paradigm of technology (cf. that of empirical science) and some specific paradigms of specific technologies (e.g. manufacturing automobiles, drilling for oil).

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## UNIT III:

## WRITING TO INFORM

## A. Objectives

1. Introduce the characteristic logic, organization, and style of informative writing in sciences and technologies.
2. Enable students to recognize the organizing roles of epistemological modes of seeing the world, (e.g., as stasis, as change: descriptively, narratively, etc.) in informative writings in sciences and technologies.
3. Have students write to inform in at least two different modes.
4. Prepare students to organize longer pieces of informative writing as composites of modes.
5. Review some basic elements of style, e.g. parallelism, economy, concreteness, precision, and pronoun clarity; and consider some special issues of writing about "things," e.g. the uses of I/we and the passive voice.

## B. Texts:

Mills and Walter, Chs. 6, 8, 5, 7, and 9, on "Description," "Classification," "Definition," "Process," and "Interpretation," respectively. (The chapter on interpretation is about both the interpretive *evaluative* mode, which is relevant here, and the logical process called abduction, which isn't.)  
 Ch. 3, pp. 29-42 (Part I "The Scientific Attitude," and Part II), all on style.

Bowen and Mazzeo,

## C. Theoretical and Critical Readings (for teachers)

Kinneavy, James, et al., Writing--Basic Modes of Organization  
 Rockas, Leo, The Modes of Rhetoric (esp. Chs. 1-4 on static and dynamic modes)

## D. Suggestions for Writing

1. Students always choose their own topics and always write for the educated non-specialist audience. (*Best see Unit VI, C. 1.*)
2. Students write "how to" discourse (instructions in a process.)
3. Students write an extended definition.
4. Students write an evaluation of a body of evidence.

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## UNIT IV:

## WRITING TO DEMONSTRATE

## A. Objectives

1. Introduce the characteristic logic, organization, and style of writing to demonstrate in sciences and technologies.
2. Enable students to use inductive and inverse-inductive organizations for whole pieces of writing and for individual sections or paragraphs.
3. Enable students to recognize deductive organizations for whole pieces of writing, to use them if appropriate to their fields (e. g., mathematics), and to use deductive organizations for individual sections or paragraphs.
4. Enable students to recognize the role that the epistemological modes (e.g. description, narration, classification, evaluation) play in organizing sections of logical demonstrations.
5. Review paragraph structure and length, the uses of coordination and subordination, the placement of modifiers and subordinate clauses; and discuss the transitions most useful in argumentation.

## B. Texts

Mills and Walter, Ch. 3, pp. 44-49 on sentence and paragraph structure.  
Bowen and Mazzeo,

## C. Theoretical and Critical Readings (for teachers)

Kinneavy, A Theory of Discourse, Ch. 3  
Newton, Sir Isaac, Mathematical Principles (deductive organization).  
*an example of overall*

## D. Suggestions for Writing

Students demonstrate an inductive hypothesis in their field.

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## UNIT V:

## WRITING TO EXPLORE

## A. Objectives

1. Introduce the characteristic logic, organization, and style of writing to explore (that is, to reason about questions for which answers cannot be satisfactorily proven at present) in the sciences and technologies.
2. Enable students to use dialectical organizations for whole pieces of writing or for individual sections or paragraphs.
3. Enable students to recognize the role that the epistemological modes (e. g. description, narration, etc.) play in organizing sections of explorations.
4. Review the uses of the comma (esp. with restrictive and non-restrictive clauses), and the uses of the semicolon and colon.

## B. Texts

*Kuhn, Ch.*  
Bowen and Mazzeo,

## C. Theoretical and Critical Readings (for teachers)

Kinneavy, A Theory of Discourse, Ch. 3  
Kuhn, The Structure of Scientific Revolutions (the logic of exploration).

## D. Suggestions for Writing

Students explore a vexed question in their field.

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## UNIT VI:

LIBRARY  
THE RESEARCH PAPER OR REPORT

## A. Objectives

1. Enable students to identify and limit appropriate topics for library research in the professional literature of their fields.
2. Give students practice in library research in their fields, especially in locating and using indexes to professional periodical literature, and the periodical literature itself.
3. Give students practice in writing short project proposals and project reports.
4. Enable students to identify in their own work material that must be credited to its source, and to give credit in proper form.
5. Have students write a library research paper or report in their fields with informative, demonstrative, or exploratory aim.
6. Enable students to write appropriate introduction<sup>s</sup>, transition<sup>s</sup>, conclusion<sup>s</sup>, bibliograph<sup>s</sup> and abstract<sup>s</sup> for library research paper<sup>s</sup> or report<sup>s</sup>.

## B. Texts

Mills and Walter, Chs. 22, 23, 10, 11, and 12, on "Finding Published Information," "Writing the Report," "Introductions," "Transitions," and "Conclusion;" (Chs. 15 and 13, on "Proposals" and "Progress Reports," may also be consulted but are about more extensive efforts than are assigned; part of Ch. 4, on "Abstracts," may be useful; as may Ch. 21, on "Graphic Aids").

## C. Suggestions for Writing

1. Students either write for the educated non-specialist or, if they wish to write for a specialist audience, arrange for a faculty member in their field to evaluate the report jointly with you. Students are responsible for the mechanics of this process.
2. Encourage students to write about topics of genuine professional interest and use to them.
3. Allow students to combine library and empirical research (e.g., review the literature on a topic and then report an original experimental study they have conducted or helped conduct which has been developed in response to the existing literature).