

SAMPLE PROPOSAL

LSC # _____
Action _____

COVER SHEET: Request for Approval to Use W-Designation

TYPE I. PROFESSOR COMMITMENT

- Professor _____ Phone _____
 Writing Workshop? (If not at IUP, where? when? _____)
 Proposal for one W-course (see instructions below)
 Agree to forward syllabi for subsequently offered W-courses?
-

TYPE II. DEPARTMENT COURSE

- Department Contact Person _____ Phone _____
 Course Number/Title _____
 Statement concerning departmental responsibility
 Proposal for this W-course (see instructions below)
-

TYPE III. SPECIFIC COURSE AND SPECIFIC PROFESSOR(S)

- Professor(s) Iphigenia Walker Phone 357-12XX
 Course Number/Title HIST 3XX Social History of Colonial America
 Proposal for this W-course (see instructions below)
-

SIGNATURES:

Professor(s) signed by originating professor(s) _____

Department Chairperson signed by department chairperson _____

College Dean signed by college dean _____

Director of Liberal Studies _____

COMPONENTS OF A PROPOSAL FOR A WRITING-INTENSIVE COURSE:

- I. "Writing Summary"--one or two pages explaining how writing is used in the course. First, explain any distinctive characteristics of the content or students which would help the Liberal Studies Committee understand your summary. Second, list and explain the types of writing activities; be especially careful to explain (1) what each writing activity is intended to accomplish as well as the (2) amount of writing, (3) frequency and number of assignments, and (4) whether there are opportunities for revision. If the activity is to be graded, indicate (5) evaluation standards and (6) percentage contribution to the student's final grade.
 - II. Copy of the course syllabus.
 - III. Two or three samples of assignment sheets, instructions, or criteria concerning writing that are given to students. Limit: 4 pages. (Single copies of longer items, if essential to the proposal, may be submitted to be passed among LSC members and returned to you.)
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Please number all pages. Provide one copy to Liberal Studies Committee.

Before you submit: Have you double-checked your proposal against "The Liberal Studies Committee's Most Frequently Asked Questions"?

WRITING SUMMARY -- HIST 3xx "Social History of Colonial America"

HI 3xx Social History of Colonial America is proposed for identification as a "W" course. The course is taught every Spring and is listed as a Liberal Studies Elective. Most students in the class are juniors and seniors; a few may be sophomores. Students are drawn from a variety of majors; class size is limited to 25. The course will count toward a history major or minor.

There are five basic types of writing which occur in this class:

1. **WRITING TO STIMULATE THOUGHT OR TO SUMMARIZE A POINT.** After listening to a lecture or participating in a discussion, students may be asked to summarize the main point(s) of the class; this helps to reinforce the idea that history is argument rather than a mere collection of unrelated facts. On other occasions, students may be asked to write down a few ideas about a question in preparation for an ensuing discussion; this helps to focus thought and improve the quality and liveliness of the discussion. These are not collected and not graded. They do not contribute to the students' grades, except indirectly in the sense that they help students learn.
2. **WRITING FOR EVALUATION.** There are two major examinations, a mid-term and a final. Each has two types of questions: (a) paragraph-style identification-relationship questions, which ask students to identify two people or terms and explain the connection between them; (b) larger, interpretive questions asking students to apply what they have learned to novel situations. Students write their answers during the 1-1/2 hour class period, but have copies of the major essay questions ahead of time. In evaluating the answers, the construction of the essay counts a great deal, but students are not expected to produce fully edited prose. 50% of grade.
3. **WRITING TO ENHANCE READING.** Students read five paperbacks for this class; each is the basis for a class discussion. In preparation for these discussions, students must prepare two things: (a) "What's in the Book Card" and (b) a short 1-2 page paper as directed by an assignment sheet. Instructions for the cards are attached, as is a sample of an assignment sheet. The objective of the card is to encourage students to focus on the thesis of the book; the objective of the brief paper is to encourage them to think about the implications of the book and to see history's connections to present issues. Both assignments are graded on a simple scale of 0, 1, 2 as indicated on the attached sheets. 25% of grade.

4. **WRITING TO INTEGRATE LEARNING AND THINK CREATIVELY ABOUT A TOPIC.** Students are asked to do additional reading on a topic of their choice and write an interpretive essay. Length is 10-15 pages. This assignment allows students to demonstrate their ability to frame a historical argument. The assignment is monitored at various stages throughout the semester and graded according to distributed criteria. [See attachment.] The paper is expected to be presented in fully edited English. After it has received an initial evaluation, students have an opportunity to revise and resubmit. 25% of grade.

5. **NOTE-TAKING.** Because there is no standard textbook for this course, much of the material is presented in lectures. Students are encouraged to take their notes in a double-entry format--that is, one side of a page for recording the lecture and the opposite for making notations about implications, questions, and insights which the student sees. This encourages students to see history as interpretation and to engage in interpretation themselves. Although notebooks are occasionally examined if a student is having difficulty, they are not collected or graded.

Summary Chart for Writing Assignments*

A. Writing Assignments					
Assignment Title	# of Assignments	# of total pages	Graded (Yes/No)	Opportunity for Revision (Yes/No)	Written Assignment represents what % of final course grade
<i>Short, in-class writing</i>	~5	<10	no	no	0
<i>Brief papers on assigned readings</i>	5	5-10	yes	no	25
<i>Interpretative Essay</i>	1	10-15	yes	yes	25
<i>Note-taking</i>	NA	variable	no	no	0
Totals	~11	15-3	NA	NA	50

B. Examinations (Complete only if you intend to use essay exams/short answers as part of the required number of pages of writing.)			
Exams	Approx.% of exam that is essay or short answer	Anticipated # of pages for essay or short answer, or approx. word count	Exam constitutes what % of final course grade
1.	100	2-5	25
2.	100	2-5	25
3.			
Totals		5-10	50

*Total writing assignments should contain at least 5000 words (approximately 15-20 typed pages) in two or more separate assignments; written assignments should be a major part of the final grade— at least 50% or more.

COURSE SYLLABUS

I. CATALOG DESCRIPTION

HIST 3xx Social History of Colonial America
Prerequisites: none 3 c--01—3cr

A study of social conditions and trends during the colonial period.

II. COURSE OBJECTIVES

A. Framing Historical Argument--Reading, Writing, and Speaking. You should understand what historians think are important questions, what they consider good evidence, and how they organize their thoughts to convince others. You should be able to recognize this when you read or listen to others, and you should be able to do it yourself when you write or discuss.

B. Historical Knowledge. You should understand the social conditions and trends of the era under study, and you should become familiar with related people, events, and items of material culture.

C. The State of the Field. You should know what is happening among historians who are working on the topics we consider. Who are some of the important historians? What are they doing that is new? What are the points of controversy among them?

III. COURSE OUTLINE

A. Social Conditions in Europe on the Eve of Colonization (2 weeks)

B. Native Americans during the Period of Colonization (2 weeks)

C. Early Settlement Patterns (4 weeks)

1. New England Towns--Consensual Communities
2. The Middle Colonies--Community and Individualism
3. The Plantation South--The Origins of Slavery

D. Four Examples of Changes over Time (4 weeks)

1. Demographic Trends
2. Child-Rearing Patterns and Education
3. The Role of Women
4. The Status of Minority Groups within the Colonies

E. Social Conditions on the Eve of Revolution (2 weeks)

IV. EVALUATION METHODS

Final Course grade is determined as follows:

- 50% Two Major Examinations (mid-term and final) consisting of identification-relationship paragraphs and longer essays
- 25% "What's in the Book Cards" and Short Papers on each of five paperback books
- 25% Historical Essay (10-15pp) based on reading chosen from course bibliography

V. REQUIRED READING

John Demos, A Little Commonwealth: Family Life in Plymouth Colony

Stephanie Wolf, Urban Village: Population, Community, and Family Structure in Germantown, Pennsylvania, 1683-1800

Darrett and Anita Rutman, A Place in Time: Middlesex County, Virginia, 1650-1750

Patricia Tracey, Jonathan Edwards, Pastor: Religion and Society in Eighteenth-Century Northampton

E. S. Morgan, American Slavery-American Freedom: The Ordeal of Colonial Virginia

"WHAT'S IN THE BOOK CARD"

One of the keys to being a good reader is to realize that you read different kinds of prose differently. You don't read a letter from home the same way you read *The Penn*. (You read the first from start to finish, but you skip all around in a newspaper.) You don't read a mystery novel the same way you read a history book. (It would spoil a mystery to read the last chapter first, but sometimes that's the best thing to do with a history book because with a history book you want to find the answer as quickly and easily as possible; reading always is easier and makes more sense if you know ahead of time where the author is going.)

WHEN YOU READ A HISTORY BOOK, HERE ARE SOME QUESTIONS TO KEEP IN MIND. IF YOU CAN ANSWER THESE, YOU UNDERSTAND THE BOOK.

(1) What is the over-all question which the author is trying to answer? What is the problem, puzzle or mystery which the author is trying to figure out? (Hint: sometimes the author tells you this in the preface or introduction.)

(2) What is the answer to the book's over-all question? What is the major point of the book? Or, to use the scholar's word: what is the thesis of the book? The author may tell you this right from the beginning, or put it in the conclusion. (Unfortunately, some authors are less cooperative and make you hunt for it.)

(3) How does the author support the thesis? How is the book organized? What sub-points are used to move the argument forward? What types of sources were examined, and how is the information used?

(4) What are the author's thoughts about the answer (thesis)? Does the author approve of the way events turned out? Is the author satisfied, proud, troubled, offended? (The author may not tell you this in so many words--you'll have to judge by the way the story is told.)

(5) What do you think about the answer (thesis)? Are you convinced? What connections do you see to other historical topics? To events today?

YOUR 5 X 8 "WHAT'S IN THE BOOK CARD" SHOULD HAVE THIS INFORMATION:

AUTHOR AND TITLE:

DATE WHEN THE BOOK WAS FIRST PUBLISHED:

- 1. The Book's Over-all Question:**
- 2. The Answer (Thesis):**
- 3. Types of sources used by author?**
- 4. The Author's Feeling about the Answer (Thesis):**

USE THE BACK OF THIS CARD TO OUTLINE (OR EXPLAIN) THE BOOK'S STRUCTURE

ASSIGNMENT SHEET

Demos, A Little Commonwealth

After you have read Demos's book, write on one of the following questions:

1. Identify three aspects of early New England social patterns which you think present the greatest contrast to life in the twentieth century. What do you think are the advantages and/or disadvantages of seventeenth-century patterns compared to today's?
 2. If you were teaching a high school class, what are some ways you might use what you learned from Demos's book?
-

THE ASSIGNMENT WILL BE GRADED 0 TO 2 POINTS:

- 2 -- You've done a good job; this is what was expected of you.
- 1 -- I get the impression you didn't put very much thought into this before you wrote it; you should be able to do better.
- 0 -- You didn't turn in a paper.

LENGTH: I won't read more than two pages.

TWO OTHER RULES:

- A. I expect the paper to be neatly typed or written in ink. If it is not, it will simply be returned to you to do over.
- B. I expect you to follow standard English usage and spelling. Your paper doesn't have to be flawless; I can tolerate an occasional misspelling. But if there are enough errors to be distracting, I will simply return the paper and ask that you clean it up before I read it.

CHECK LIST FOR HISTORICAL ESSAYS
(mark and attach to front of your essay)

- _____ Did you answer the question that was asked?
- _____ Does your paper take a clear position on the question? That is, does it have a thesis? Would any reasonable reader be able to tell easily what it is?
- _____ Have you supported your position well?
 - _____ Have you included the sub-theses (sub-points) that you need to develop your main point?
 - _____ Have you backed them up with evidence? Does your evidence fit the argument; that is, does it prove what you say it does?
 - _____ Have you given credit to other historians when you used their ideas? (although you do not have to have formal footnotes or citations, the reader must be able to tell which ideas are originally yours and which are not.)
 - _____ Are your points arranged in the most convincing order? Does the argument proceed logically? Are there points placed toward the end that would make more sense near the beginning, or vice versa?
 - _____ Have you identified and answered counterarguments?
 - _____ Have you been careful about historical accuracy and chronology?
- _____ Has someone else read your essay? Does this person agree that you can check off all the items listed above?
- _____ *Have you edited your paper for meaning and style?
- _____ *Have you edited your paper for grammar and punctuation?
- _____ *Have you read your paper word-by-word (backwards) to check for spelling and capitalization?
- _____ Have you set your typewriter or word-processing printer for double-spacing and for generous margins?

*Help on these points is available in Barbara Walvoord, Three Steps to Revising Your Writing for Style, Grammar, Punctuation, and Spelling (1988), which is available at the Stapleton Library Reserve Desk.

SAMPLE PROPOSAL

LSC # _____
 Action _____

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- (X) Professor Leonardo S. Cauchy Phone 357-ABCD
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- () Professor(s) _____ Phone _____
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SIGNATURES:

Professor(s) signed by originating professor(s)

Department Chairperson signed by department chairperson

College Dean signed by college dean

Director of Liberal Studies _____

COMPONENTS OF A PROPOSAL FOR A WRITING-INTENSIVE COURSE:

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Please number all pages. Provide one copy to Liberal Studies Committee.

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**IUP Writing Workshop (May 1993) and MAA Minicourse #5 Writing in Math Courses taught by G. Copen and D. Smith, Jan. 11-12, 1989, Phoenix, AZ.

WRITING SUMMARY -- MATH 4XX "Chaotic Dynamical Systems"

MATH 4XX Chaotic Dynamical Systems is proposed for identification as a "W" course. The course is taught every fall, but is not listed as a Liberal Studies Elective. Because of the prerequisites, most of the students in the class will be juniors or seniors, although advanced sophomores could enroll in the course. The students will be primarily from mathematics, physics and possibly chemistry. Class size is limited to 30. The course will count towards a mathematics major or minor.

Three types of writing will occur in this course.

1. PROSE WRITING TO CLARIFY THINKING, BUILD INTUITION AND EVALUATE INSTRUCTION.

After reading about or listening to a lecture on a specific mathematical concept students will be asked to summarize that concept without using the usual mathematical symbolism. The effect of this type of writing is to force the student to concentrate on the concepts involved rather than on the symbolism. This can be of great value in clarifying thinking and building intuition concerning mathematical ideas.

Descriptive short answer essay questions will appear on each examination and will constitute at least 30% of the grade on the examination. Clear and well organized answers to these questions will be expected, but fully edited prose will not be required.

Five essays of two to three pages in length describing chaotic systems or aspects of chaotic systems will be assigned. A rough draft for each will be collected and returned to the students with comments on both content and writing style. Student-faculty conferences will be encouraged for those students needing more explanation than comments on a rough draft could provide. These essays will be graded on 50-50 basis - 50% for content and 50% on writing. Letter grades rather than numeric grades will be used on these assignments. These essays will constitute 20% of the final grade.

After listening to a lecture or discussion of a particular concept the students will be asked, in the last five to eight minutes of the class period, to write a short essay explaining the concept. These essays will be collected and used by the instructor as a means of evaluating the effectiveness of his/her instructional methods. They will not be graded, but will be returned to the student.

2. TECHNICAL REPORTS.

These reports are written for persons with some mathematical sophistication, but who may only have an intuitive feeling for the topic of the report. Reports of this nature contain mathematical results which need to be presented clearly and precisely, but it is important that the mathematics does not become so technical that the reader with only moderate background becomes overwhelmed by it. Four computer assignments will be given to enable the students to observe, simulate and experiment with chaotic systems. Formal technical reports will be expected on each of these assignments. The reports will be from three to five pages in length and will describe the chaotic system being studied including any mathematics involved,

explain the method of simulation, describe the results and give conclusions resulting from the experimentation. Students will write a preliminary design of the simulation and prepare an outline and a rough draft of the final report before submitting it. All will be returned with comments. These technical reports will constitute 20% of the final grade.

3. WRITING MATHEMATICS FOR JOURNAL PUBLICATION.

This type of writing is very different from the above forms of writing. The prose in journal articles is very terse and often limited to the abstract and transition sentences. Precision in expression is paramount. It is the mathematics that is important - the statements of definitions and theorems as well as the flow, clarity, and brevity of the proofs. Students will select, with the help of the instructor, a topic and prepare a research report in the form of a journal article on it. An outline and rough draft will be written, collected and returned with comments before the final article is submitted. The report is to be from five to eight pages and will constitute 30% of the course grade.

Summary Chart for Writing Assignments*

A. Writing Assignments					
Assignment Title	# of Assignments	# of total pages	Graded (Yes/No)	Opportunity for Revision (Yes/No)	Written Assignment represents what % of final course grade
Essays	5	10-15	yes	yes	20
Short in-class writing	<10	<10	no	no	0
Computer reports	4	12-20	yes	yes	20
Research report	1	5-8	yes	yes	30
Totals	10	27-43	NA	NA	70

B. Examinations (Complete only if you intend to use essay exams/short answers as part of the required number of pages of writing.)			
Exams	Approx.% of exam that is essay or short answer	Anticipated # of pages for essay or short answer, or approx. word count	Exam constitutes what % of final course grade
1.	30	2 pp	15
2.	30	2 pp	15
3.			
Totals	60	4	30

***Total writing assignments should contain at least 5000 words (approximately 15-20 typed pages) in two or more separate assignments; written assignments should be a major part of the final grade—at least 50% or more.**

COURSE SYLLABUS
MATH 4XX Chaotic Dynamical Systems

I. Catalog Description

MATH 4XX Chaotic Dynamical Systems

Prerequisites: (MATH 227 or MATH 124) and (MATH 342 or MATH 241 or MATH 171) and some knowledge of computer programming.

An introduction to discrete and continuous chaotic dynamical systems which blends the mathematics of chaos with descriptions and applications.

II. Objectives

- A. The students will gain a knowledge of discrete chaotic dynamical systems.
 - 1. The student will understand periodic points and their role in chaotic systems.
 - 2. The student will be able to give the characteristic properties of discrete chaotic systems.
 - 3. The student will understand the mathematics of bifurcation.
 - 4. The student will understand the mathematics involved in the period doubling route to chaos.
 - 5. The student will be able to describe the genealogy of periodic points.
 - 6. The student will understand the difference between chaotic behavior and random behavior.
- B. The student will gain a knowledge of continuous chaotic dynamical systems.
 - 1. The student will understand the mathematics underlying the dynamics of linear maps in two and three dimensions.
 - 2. The student will have detailed mathematical knowledge of at least one chaotic system derived from nonlinear differential equations.
 - 3. The student will have a descriptive knowledge of strange attractors.
 - 4. The student will have a detailed mathematical knowledge of the Hopf bifurcation.
- C. The student will have a knowledge of chaotic systems which arise in the complex plane.
 - 1. The student will have a detailed mathematical knowledge of the complex quadratic map.
 - 2. The student will have a detailed mathematical knowledge of complex periodic points.
 - 3. The student will have a descriptive computational understanding of Julia sets.
- D. The student will experiment with computer simulations of a variety of systems which exhibit chaotic behavior.

- E. The student will understand potential uses of chaotic systems in natural situations.
 - 1. The student will understand chaos in feedback systems.
 - 2. The student will understand chaos in differential systems in ecology and epidemiology.
 - 3. The student will understand how chaos occurs in periodically forced nonlinear oscillators.

 - F. Students will gain experience in writing mathematics.
 - 1. Students will write one or two paragraph prose descriptions of aspects of chaotic systems.
 - 2. Students will write several short essays giving detailed descriptions of the mathematics and basic concepts underlying chaotic systems.
 - 3. Students will write the outcomes of computer simulations and experimentations in formal report format.
 - 4. Students will write a journal article, an article in the style and format necessary for publication in a mathematics journal, on a topic in chaotic dynamics.
- III. Course Outline
- A. One-Dimensional Dynamical Systems
 - 1. Examples of dynamical systems.
 - 2. The quadratic map.
 - 3. Hyperbolicity.
 - 4. Symbolic dynamics.
 - 5. Chaos.
 - 6. Sarkovskii's theorem.
 - 7. The Schwarzian derivative.
 - 8. Bifurcation theory.
 - 9. Period three implies chaos.
 - 10. Maps of the circle.
 - 11. The period-doubling route to chaos.
 - 12. Genealogy of periodic points.
 - B. Higher Dimensional Dynamical Systems
 - 1. The dynamics of linear maps.
 - 2. The horseshoe map.
 - 3. Hyperbolic toral automorphisms.
 - 4. Strange Attractors.
 - 5. The Hopf bifurcation.
 - 6. The Henon map.
 - C. Complex Analytic Dynamical Systems
 - 1. Preliminaries on complex variables.
 - 2. The complex quadratic map.
 - 3. Periodic points.
 - 4. The Julia set.
 - 5. Neutral periodic points.
 - D. Applications of Chaos
 - 1. What is the use of chaos?
 - 2. Chaos in feedback systems.
 - 3. Differential systems in ecology and epidemiology.
 - 4. Periodically forced nonlinear oscillators.

VI. Evaluation Methods

The grade for the course will be determined as follows:

- 30% Examinations: Two in class examinations, a mid-term and a final, consisting of several mathematical problems and several descriptive short answer essay questions. The essay questions will ask the students to give brief prose descriptions of various aspects of chaos.
- 20% Computer Reports. Four computer assignments will be given so that students can observe, simulate and experiment with chaotic systems. Formal written reports of 3 to 5 pages will describe the chaotic system simulated including any mathematics involved, the methods used and the results and conclusions resulting from the experimentation.
- 25% Five essays two to three pages each on an aspect of chaotic systems. The topic of the essays will be assigned by the instructor.
- 25% A journal article of from five to eight pages on an aspect of chaotic dynamics of interest to the student. This article may be on the mathematics of chaos or on applications of chaotic systems.

V. Required Textbooks, Supplemental Books and Readings

Textbook:

Devaney, R.L. An Introduction to Chaotic Dynamical Systems,
Benjamin/Cummings, Reading, MA, 1986.

Reference texts:

Gleick, J., CHAOS making a new science, Viking, New York, NY, 1987.
Holden, A.V. ed., Chaos, Princeton University Press, Princeton, NJ, 1986.
Moon, Francis C., Chaotic Vibration - An Introduction for Applied Scientists and Engineers, John Wiley & Sons, New York, NY, 1987.
Kubicek, M. and Marek, M., Computational Methods in Bifurcation Theory and Dissipative Structures, Springer-Verlag, New York, NY, 1983.
Golubitsky, M. & Guckenheimer, M. ed., Multiparameter Bifurcation Theory, American Mathematical Society, Providence, RI, 1986.

Reference Articles:

Conrad, M. What is the use of chaos? In Chaos, ed. A.V. Holden, pp. 3-14, Princeton University Press (1986).
May, R.M. Simple mathematical models with very complicated dynamics. Nature, Lond. 261, 459-67 (1976).
Wilde, C., The Contraction Mapping Principle, Umap, Newton, MA. Vol. 2, No. 2, 23-40 (1979).

SAMPLE ASSIGNMENTS

Sample topics for written essays:

1. Describe the difference between chaotic models and deterministic models.
2. Describe the differences between chaotic systems and random systems.
3. Explain bifurcation and give a brief description of why it happens.
4. Describe Julia sets and how they are constructed.
5. Give a brief description of strange attractors and how they arise.
6. Describe in detail the period-doubling bifurcation diagram. Give not only known facts about the diagram, but also make conjectures you think might be true about this diagram.

Sample essay questions for examinations or instructional evaluation:

1. Explain why period three implies Chaos.
2. Describe chaos.
3. Describe briefly how chaos could develop in a feedback system.
4. Describe the difference between an attractive fixed point and a repelling fixed point.
5. Describe a periodic point.
6. Describe how chaos might be useful.

Sample computer assignments for which technical reports could be written.

1. Write a computer program which gives a graphical description of bifurcation and submit a written report which incorporates this graphical description in an explanation of bifurcation.
2. Write a computer program which produces a variety of Julia sets. Write a report describing which variables are important in each of the Julia sets produced.
3. Write a computer program which traces out the "inverse tree" by various routes for the quadratic function. Explain the convergence or non-convergence of the various routes.
4. Write a computer program which produces a strange attractor. Describe and explain some of the salient features of the strange attractor you produce. Do not use one which was produced in class or is in the text.

The topic for the research paper is to be selected by the student and could involve an expansion on any topic covered in the course or an application which the student found by looking through appropriate literature.

The grading of written work will be explained to students as described in the "Writing Summary."